UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

NOV 04 2016

Mr. Ron Gore
Chief
Alabama Department of Environmental Management
Air Division
1400 Coliseum Boulevard
Montgomery, Alabama 36130

Dear Mr. Gore:

Thank you for submitting the state of Alabama's 2016 Ambient Air Monitoring Network Plan (Network Plan) dated July 8, 2016, and the network plan addendum on October 28, 2016. The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10.

The U.S. Environmental Protection Agency understands that the Alabama Department of Environmental Management (ADEM) provided the public a 30-day review and comment period for the Network Plan and network plan addendum. The EPA has reviewed the Network Plan and the public comments provided by ADEM. Our response is enclosed.

In the July 8, 2016, letter transmitting the Network Plan to the EPA, ADEM stated, "During the 30-day public review period, ADEM received comments from several individuals and organizations. ADEM and the Jefferson County Department of Health reviewed the comments and responded to the commenters. No changes were made to the plan based on these comments." As an attachment to the Network Plan, ADEM submitted several of its response letters to commenters and some of the comments received from the public with the Network Plan. However, it appears that some of the public comments received by ADEM were not submitted in the attachment to the plan. The EPA requests that ADEM submit a copy of all public comments received about the Network Plan as required by 40 CFR §58.10(a)(1), by December 31, 2016.

In the EPA's response to last year's Network Plan, we noted that ADEM failed to request a lead (Pb) source monitoring waiver or provide a monitoring plan for the Anniston Army Depot. No such request was included in this year's Network Plan either. Pb source monitoring waivers are specifically required by 40 CFR Part 58, Appendix D, Section 4.5 to be renewed in each 5-year network assessment. The state will need to request a waiver from monitoring. If a waiver is not submitted, the EPA will require ADEM to site a Pb monitor near the depot using the siting criteria listed in 40 CFR Part 58, Appendix D, Section 4.5(a) and 40 CFR Part 58, Appendix E. ADEM must submit a Pb source monitoring waiver request or an addendum proposing a source-oriented Pb monitoring site by December 31, 2016. Please note that per 40 CFR §58.14, the EPA Regional Administrator must approve all changes to an agency's state or local air monitoring station (SLAMS) network, including site closures and relocations. Please request approval to shutdown, start-up, or re-site all SLAMS monitors.

Also, ADEM proposed in its Network Plan to conduct SO_2 monitoring near the Lhoist North America plant in Montevallo, Alabama to meet its obligations under the SO_2 Data Requirements Rule (40 CFR Part 51, Subpart BB). EPA staff have discussed the proposed site with ADEM staff and even accompanied them on a visit to the site. As a result of this work, ADEM changed slightly the location of the SO_2 monitoring site that required an addendum to the Network Plan. ADEM then conducted a public comment period for an addendum. The comment period ended on October 20, 2016, and no comments were received. The EPA has reviewed the addendum and has determined it is complete. The EPA approves the site, and its operation is expected to commence on or by January 1, 2017.

Finally, the EPA would also like to discuss with ADEM the concerns about coal dust raised by the communities near the Port of Mobile coal terminal and the need for PM_{10} monitoring as described by several commenters to the Network Plan. The EPA requests that ADEM provide any additional historical PM_{10} monitoring data in the Mobile area that is not referenced in the Network Plan or previously reported to the Air Quality System (AQS) database. We request that ADEM submit these data by December 31, 2016.

With this letter, the EPA approves ADEM's Network Plan with the exception of the Pb monitoring network. In addition to the comments provided above, we have enclosed additional comments on your Network Plan. We look forward to working with your staff to address the comments.

Thank you for your work with us to monitor air pollution and promote healthy air quality in Alabama. If you have any questions or concerns, please contact Gregg Worley at (404) 562-9141 or Darren Palmer at (404) 562-9052.

Sincerely,

for Jeaneanne M. Gettle
Acting Director
Air, Pesticides and Toxics Management Division

Enclosure

cc: Jonathan Stanton, Director
Jefferson County Department of Health

Daniel E. Shea, Director
Huntsville Department of Natural Resources

2016 State of Alabama Ambient Air Monitoring Network Plan
U.S. EPA Region 4 Comments and Recommendations

This document contains the U.S. EPA comments and recommendations on the state of Alabama's 2016 ambient air monitoring network plan (Network Plan). Ambient air monitoring rules, which include regulatory requirements that address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR Part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR Part 58, Appendix D. Minimum monitoring requirements are listed for ozone (O_3), particulate matter less than 2.5 microns ($PM_{2.5}$), particulate matter less than 10 microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries, as defined by the U.S. Office of Management and Budget's (OMB) July 1, 2015, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O_3, $PM_{2.5}$, and PM_{10}, only apply to metropolitan statistical areas (MSAs), which are a subset of CBSAs containing an urban core of 50,000 or more population. OMB currently defines 13 MSAs in the state of Alabama. These MSAs and the respective July 1, 2015, population estimates from the U.S. Census Bureau are shown in Table 1.

Table 1: Metropolitan Statistical Areas and July 1, 2015 Population Estimates

MSA Name	Population
Anniston-Oxford-Jacksonville, AL	115,620
Auburn-Opelika, AL	156,993
Birmingham-Hoover, AL	1,145,647
Columbus, GA-AL	313,749
Daphne-Fairhope-Foley, AL	203,709
Decatur, AL	152,680
Dothan, AL	148,171
Florence-Muscle Shoals, AL	146,950
Gadsden, AL	103,057
Huntsville, AL	444,752
Mobile, AL	415,395
Montgomery, AL	373,792
Tuscaloosa, AL	239,908

Proposed Monitoring Network Changes

There are three primary quality assurance organizations (PQAO) in the state of Alabama with the responsibility of maintaining an adequate ambient air monitoring network: the Alabama Department of Environmental Management (ADEM), the Jefferson County Department of Health (JCDH), and the Huntsville Department of Natural Resources and Environmental Management (HDNREM).

During the review of last year's Network Plan, we determined the HDNREM needed to install a collocated PM_{10} sampler and report the data to AQS in order to meet the quality assurance requirements for manual methods found in 40 CFR Part 58, Appendix A, Section 3.3.4. HDNREM subsequently

installed a collocated sampler and is now meeting the regulatory requirement at the Airport Road site (AQS ID 01-089-0014).

In the response to the Network Plan submitted by ADEM in 2015, the EPA approved several changes to the state of Alabama's monitoring network that have since been implemented. These changes are summarized in Table 2 below.

Table 2: EPA Approved Changes from 2015 Network Plan

Agency	AQS Site ID	Pollutant	Monitor Type	Action Taken
ADEM	01-101-1002	$PM_{2.5}$ Speciation	CSN	Discontinued. EPA Defunded.
	01-113-0001	$PM_{2.5}$	SLAMS	Relocated nearby.
	01-097-0016	PM_{10}	SLAMS	Discontinued PM_{10} Site
HDNREM	01-089-0014	$PM_{2.5}$ Speciation	CSN	Discontinued. EPA Defunded.
JCDH	01-073-1003	PM_{10}	SLAMS	Discontinued Low Volume PM_{10}
	01-073-1005	PM_{10}	SLAMS	Discontinued Low Volume PM_{10}
	01-073-6002	PM_{10}	SLAMS	Discontinued Low Volume PM_{10}
	01-073-6004	PM_{10}, CO	SLAMS	Discontinued Low Volume PM_{10} and CO
	01-073-2059	NO_2, CO, $PM_{2.5}$	SLAMS	Established Near-road Site

In early 2016, ADEM relocated the Phenix City $PM_{2.5}$ site (AQS ID 01-113-0001) to a nearby location due to loss of access to that site. The EPA and ADEM agreed on the new location and the information was made available for public comment, which closed on March 10, 2016. No comments were received. Subsequently, the property owner of the new location raised the lease fee and ADEM lost access to the new location. ADEM must now find a new site in the downtown urban core unless it enters into a memorandum of agreement with the state of Georgia to share monitoring requirements in the Columbus, GA-AL CBSA. If ADEM chooses to establish a new site, it needs to submit the site proposal for a 30-day public comment period before submitting to the EPA for approval. To save time and resources, the EPA recommends that ADEM reach agreement with the EPA on a new site location prior to going to public comment.

In comments to last year's plan, the EPA noted that the Shuttlesworth site (AQS ID 01-073-6004) is the PM_{10} maximum concentration site for the Birmingham area and requested that the JCDH change the monitoring objective to reflect this finding. This change has not yet been applied in AQS. The EPA once again requests that the JCDH change the monitoring objective to "maximum concentration" or provide rationale as to why the monitor should not be characterized as "maximum concentration". The EPA asks that JCDH act on this by December 31, 2016. Finally, we appreciate the JCDH reporting both continuous PM_{10} and $PM_{2.5}$ measurements from their Shuttlesworth site to the EPA's AirNow system. While the $PM_{2.5}$ measurements are made utilizing a non-regulatory method, the data are useful in informing the EPA, the JCDH, and the local community about the general levels of $PM_{2.5}$ in the immediate vicinity of the Walter Energy facility.

Proposed monitoring network changes for 2016 are found on Page 3 of the Network Plan (see Table 3). No changes were proposed to the HDNREM's air monitoring network other than the discontinuation of the chemical speciation monitor that was defunded by the EPA.

Table 3: Proposed Changes in the 2016 Network Plan

Agency	AQS Site ID	Pollutant	Monitor Type	Action Taken	EPA Comments
ADEM	01-117-9001	SO_2 DRR	SLAMS	Startup	Approved. Operation should commence on or by January 1, 2017.
	01-051-0001	O_3	SLAMS	To be relocated	Waiting on site submittal
JCDH	01-073-6004	$PM_{2.5}$	SPM	Startup	Approved, non-regulatory
	01-073-0023	Pb	SLAMS	Shutdown	Approved, effective June 30, 2016

In addition to the changes identified in Table 3, JCDH replaced the shelter at its Shuttlesworth site earlier this year and plans to replace the shelter at its North Birmingham site by the end of 2016.

Air Quality Index (AQI) Reporting
40 CFR §58.50

AQI reporting is required for MSAs with populations over 350,000. Four MSAs in Alabama are required to report an AQI: Birmingham, Huntsville, Mobile, and Montgomery. The state's Network Plan on Page 2 contains links to ADEM, the JCDH and the HDNREM web sites where this information can be obtained. This satisfies the AQI reporting requirement for the state.

National Core (NCore) Monitoring Network
40 CFR Part 58, Appendix D, Section 3.0

The state is required to have one NCore site. The NCore site must measure, at a minimum, $PM_{2.5}$ particle mass using continuous and integrated/filter-based samplers, speciated $PM_{2.5}$, $PM_{10-2.5}$ particle mass, O_3, SO_2, CO, NO/NOy, wind speed, wind direction, relative humidity, and ambient temperature. The North Birmingham site (AQS ID 01-073-0023) was approved as the state's NCore site by the EPA's Office of Air Quality Planning and Standards (OAQPS) on October 30, 2009, and meets all requirements for the state.

O_3 Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.1 and Table D-2

The EPA determined that the O_3 monitoring network outlined in the Network Plan meets the minimum requirements found in 40 CFR Part 58, Appendix D, Section 4.1 and Table D-2 for all MSAs. We understand that ADEM will have to relocate the Dewberry Trail O_3 site (AQS ID 01-051-0001) because the property was sold and the new owners would no longer allow ADEM access to the property. On a recent visit, the EPA staff looked at proposed locations along with Gina Curvin and Mike Malaier of ADEM. The EPA staff are willing to have further discussions with your staff as you work to identify a suitable location for the monitoring station. Since the Montgomery MSA is required to have two O_3 monitors, it is important that this station be relocated before the 2017 O_3 season begins on March 1, 2017. Once ADEM identifies a suitable location, it should prepare a network plan addendum addressing this site proposal that includes all the applicable information in 40 CFR Part 58.10(b). The proposal should be submitted for a 30-day public comment period, as required, and then it should be submitted to the EPA for approval.

CO Monitoring Requirements
40 CFR, Part 58, Appendix D, Sections 3.0(b) and 4.2

Ambient air monitoring network design criteria for CO are found in 40 CFR Part 58, Appendix D, Sections 3.0(b) and 4.2. This section requires CBSAs with populations over one million to operate one CO monitor collocated with a near-road monitor. Forty (40) CFR §58.13(e)(2) requires the monitor be operational by January 1, 2017. This requirement is already met for the Birmingham CBSA by the CO monitor at the Arkadelphia near-road site (AQS ID 01-073-2059). CO monitoring is also required for the NCore network as listed in Section 3.0(b). The CO monitor located at the Birmingham NCore site (AQS ID 01-073-0023) meets this requirement. In summary, the CO monitoring network outlined in the Network Plan meets the minimum requirements for all CBSAs.

NO_2 Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.3

Three types of NO_2 monitoring are required: near-road, area-wide, and Regional Administrator. These are described in 40 CFR Part 58, Appendix D, Sections 4.3.2, 4.3.3, and 4.4.4, respectively.

The Birmingham area is the only CBSA required to have a near-road NO_2 monitoring station in Alabama. The JCDH operates a NO_2 monitor at the Arkadelphia near-road site (AQS ID 01-073-2059) to meet this requirement. The Arkadelphia near-road monitoring site was approved in the EPA's response to Alabama's 2013 Network Plan.

The Birmingham area is the only CBSA in Alabama required to have an area-wide NO_2 monitoring station. The JCDH operates a NO_2 monitor at the North Birmingham NCore site (AQS ID 01-073-0023) to meet this requirement.

The EPA has not identified any monitor in Alabama that is needed to meet the Regional Administrator NO_2 monitoring requirement. Thus, ADEM is not deficient with this requirement. The full list of NO_2 monitors identified by the Regional Administrators can be found on the EPA's website at: http://www.epa.gov/ttnamti1/svpop.html.

All of the NO_2 monitoring requirements are being met in the Birmingham CBSA and no other CBSA in Alabama is required to monitor for NO_2 at this time.

SO_2 Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.4

Ambient air monitoring network design criteria for SO_2 are found in 40 CFR Part 58, Appendix D, Section 4.4. This section requires that "[t]he population weighted emissions index (PWEI) shall be calculated by states for each core based statistical area (CBSA)." As a result, the SO_2 monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. An SO_2 monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors consistent with Appendix D, Section 4.4. At this time, the Birmingham and Mobile CBSAs are required to have two and one SO_2 monitors, respectively. The SO_2 monitoring network design outlined in the Network Plan meets the minimum requirements with the following monitors in Table 4.

Table 4: SO_2 PWEI Monitors

CBSA	COUNTY	SITE NAME	SITE ID
Birmingham	Jefferson	North Birmingham	01-073-0023
	Jefferson	Fairfield	01-073-1003
Mobile	Mobile	Chickasaw	01-097-0003

EPA's SO_2 Data Requirements Rule (DRR) (see 80 *Federal Register*, No. 162, August, 21, 2015) requires characterization of the air quality near sources with SO_2 emissions greater than 2,000 tons per year (tpy) by conducting ambient air monitoring or modeling. On July 1, 2016, ADEM submitted a final list of sources in the state around which SO_2 air quality must be characterized. Only the L'hoist North America – Montevallo Plant will be characterized using monitoring. The remaining sources will be characterized using modeling or will need to take a federally enforceable emissions limit.

Since the Network Plan was submitted to the EPA, the EPA and ADEM have agreed on an alternate location to represent the maximum concentration for the Lhoist facility. The original proposed site was identified in the Network Plan on Pages 126-150. The EPA staff conducted a site visit on June 20, 2016 to assess the proposed alternate location and ADEM provided information on that site to the EPA on Friday, September 2, 2016. ADEM subsequently submitted the network plan addendum for this site proposal for a 30 day public comment period which ended Oct 20, 2016, and no comments were received. The EPA has reviewed the addendum and has concluded it contains all the applicable information listed in 40 CFR Part 58.10(b) for this new site. This site is approved and should commence operation on or by January 1, 2017.

The appropriate quality assurance project plan covering the SO_2 DRR monitoring must be updated as necessary and approved by the EPA Region 4's Science and Ecosystem Support Division before data are collected.

Based on conversations with ADEM and the JCDH, it is the EPA's understanding that ADEM has decided not to characterize the Walter Energy and ABC Coke facilities in North Birmingham under the DRR because the annual SO_2 emissions from each facility were individually below 2,000 tons per year (the threshold that requires characterization under the DRR). ADEM and the JCDH also believe that the SO_2 air quality in the area is already adequately characterized by the SO_2 monitor at the nearby North Birmingham NCore site. However, the EPA, ADEM, and the JCDH have agreed that the JCDH will install an SO_2 monitor at the existing Shuttlesworth site in order to determine whether SO_2 concentrations near the source are higher than those measured at the North Birmingham NCore site. This monitor must operate as a SLAMS for a minimum of one year, beginning January 1, 2017. If, after one year of monitoring, the SO_2 concentrations at Shuttlesworth are higher than at North Birmingham, then additional characterization of the SO_2 concentrations in the area may be required. However, if the monitored concentrations at Shuttlesworth are lower than those at North Birmingham, then ADEM and the JCDH may request approval to discontinue the SO_2 monitor at Shuttlesworth.

Pb Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.5

Forty (40) CFR Part 58, Appendix D, Section 4.5 requires that "[a]t a minimum, there must be one source-oriented SLAMS [State and Local Air Monitoring Station] site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year..." Monitoring is ongoing as required near the Sanders Lead Company in Troy, Alabama (AQS ID 01-109-0003). The requirement to

monitor for Pb at NCore sites was removed from the new version of the ambient air monitoring rule that became effective April 27, 2016. We understand that the JCDH has stopped all Pb monitoring efforts effective June 30, 2016, at the North Birmingham NCore site (AQS ID 01-073-0023). The EPA approves this action retroactively.

Region 4 identified one deficiency in the Pb source monitoring network that was not addressed in last year's 5-year network assessment or annual network plan, or in this year's annual network plan, as requested in our response to last year's Network Plan. Based on the most current emissions data available, the 2011 national emissions inventory (NEI), the Anniston Army Depot emits 1.79 tpy of Pb, which is greater than the 0.50 tpy monitoring trigger. Pb source monitoring waivers are required by 40 CFR Part 58, Appendix D, Section 4.5 and are to be renewed in each 5-year network assessment. There was no discussion in any of the documents mentioned above regarding whether monitoring is appropriate at this facility or whether the state is requesting a waiver of monitoring requirements. If compelling documentation supporting a waiver of the monitoring requirements cannot be provided, the state will then be required to submit an addendum to the Network Plan by December 31, 2016, addressing the monitoring requirements for this facility, including a schedule of when Pb source monitoring will be established. Monitoring must begin no later than December 31, 2017. We will work with ADEM as necessary to determine the most appropriate location for ambient air monitoring around the facility.

Other than the one monitoring deficiency near the Anniston Army Depot, the Pb monitoring network described in the state's Network Plan meets all of the design criteria of 40 CFR Part 58. However, until ADEM addresses this deficiency, the EPA cannot approve the Pb portion of the Network Plan.

PM_{10} Monitoring Requirements
40 CFR Part 58, Appendix A, 3.3
40 CFR Part 58, Appendix D, Section 4.6 and Table D-4

Region 4 has determined that the PM_{10} monitoring network described on Pages 16 and 17 of the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-4 for all MSAs. The collocation requirements for manual PM_{10} monitors are also being met for all areas. Collocation requirements apply to each PQAO and are based on the sampling methods employed.

Several public comments were submitted regarding PM_{10} monitoring in Mobile, AL. Specifically, the commenters have requested PM_{10} monitoring be conducted closer to the population and industrial centers of Mobile due to concerns about fugitive dust emissions from coal loading and unloading activities. The EPA would like to work with ADEM on additional PM_{10} monitoring efforts in the communities near these activities. Monitoring has previously been conducted in other areas of Mobile, but not in the communities closest to the largest sources of coal dust emissions.

In ADEM's response to comments, it referenced a special study that was conducted in 2006. ADEM stated in the study's report that a PM_{10} monitor at the Mobile Red Cross office measured concentrations below the 24-hr. PM_{10} NAAQS and the (since revoked) annual PM_{10} NAAQS. Based on these data, ADEM stated that it "has no basis to conclude that the concentrations of coal dust in downtown Mobile pose a danger to human health." The Mobile Red Cross monitoring site referenced in this study was located approximately 5.1 miles northwest of the McDuffie coal terminal. This monitor, as well as other PM_{10} monitors previously operated by ADEM, are useful to characterize the urban background concentrations in Mobile. However, it does not appear that these monitors were appropriately sited to

characterize the maximum concentration of PM_{10} in communities near the coal terminals, which would likely occur much closer to the source.

The most recent PM_{10} data collected near the McDuffie coal terminal that ADEM has reported to AQS is from a fenceline special purpose monitor (AQS ID 01-097-0030) that ADEM operated at a wastewater treatment plant north of the coal terminal from 1996-2005. This monitor violated the 24-hr PM10 NAAQS in 9 of the 10 years in which it produced a valid 24-hr PM_{10} design value. The monitor had a violating design value from 2003-2005, the most recent three-year period before the monitor was discontinued at the end of 2005.

While these fenceline ambient concentrations may not be representative of community exposure, the EPA does not agree that the historical data cited by ADEM is sufficient to characterize the maximum concentrations of PM_{10} in the communities closest to the coal terminals in Mobile. The EPA would like to have additional discussions with ADEM about future monitoring efforts in the surrounding communities to adequately characterize exposure to coal dust or other coarse particles. If ADEM collected any additional data during the 2006 monitoring study that was not discussed in the Network Plan or already reported to AQS, please forward this information to our office by December 31, 2016, for our review. ADEM is also required to submit copies of all public comments received about the Network Plan as required by 40 CFR §58.10(a)(1) and discussed in the cover letter, by December 31, 2016.

$PM_{2.5}$ Monitoring Requirements
40 CFR Part 58, Appendix A, 3.2.3
40 CFR Part 58, Appendix D, Section 4.7 and Table D-5

Region 4 has determined that the $PM_{2.5}$ monitoring network described on Pages 22-26 of the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-5 for all MSAs. The $PM_{2.5}$ collocation requirement found in 40 CFR Part 58, Appendix A, 3.2.3.2 for manual reference and equivalent methods collocated $PM_{2.5}$ monitoring is also being met for all three agencies. Collocation requirements apply to each PQAO and are based on the sampling methods employed.

$PM_{2.5}$ Near-road Monitoring Requirement
40 CFR Part 58, Appendix D, Section 4.7.1(b)(2)

Regulatory requirements in 40 CFR Part 58, Appendix D, Section 4.7.1(b)(2) require that for "CBSAs with a population of 1,000,000 or more persons, at least one $PM_{2.5}$ monitor is to be collocated at a near-road NO_2 station." The $PM_{2.5}$ monitor at the Arkadelphia near-road site (AQS ID 01-073-2059) in Birmingham fulfills this requirement.

$PM_{2.5}$ Continuous Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.7.2

Regulatory provisions for continuous $PM_{2.5}$ monitoring require that "[t]he state, or where appropriate, local agencies must operate continuous $PM_{2.5}$ analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM, Federal Equivalent Method (FEM), Approved Regional Method (ARM) monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies." Based on the information provided in the Network Plan, Region 4 has determined that the $PM_{2.5}$

continuous monitoring network meets or exceeds the minimum monitoring requirements in all of the MSAs in the state.

A recent technical systems audit confirmed that ADEM has modified its FEM monitors by replacing the particle separator for all but one of its continuous $PM_{2.5}$ monitors so that any data collected by these monitors do not meet FEM criteria and cannot be used for regulatory decision making. These FEM samplers are being operated with a sharp cut cyclone (SCC) instead of a very sharp cut cyclone (VSCC) as required by the method designation. The EPA has developed a process found at 40 CFR §58.11(e) for agencies to statistically evaluate the data collected from a collocated continuous FEM. This process allows monitoring agencies to request exclusion from comparisons to the NAAQS if the collocated FRM and FEM data do not satisfy the regulatory Class III FEM comparability criteria. The EPA discourages agencies from modifying equipment in the manner that ADEM has, because it likely reduces the quality of the data collected. The EPA requests that ADEM operate these monitors so that they meet the FEM method requirements beginning January 1, 2017. After collecting two years of collocated FRM and FEM data, ADEM may request exclusion of the data from NAAQS comparisons. If the collocated data do not demonstrate sufficient comparability, using the process described in §58.11(e), ADEM may request the exclusion via the Network Plan process.

$PM_{2.5}$ Background and Transport Sites
40 CFR Part 58, Appendix D, Section 4.7.3

Forty (40) CFR Part 58, Appendix D, Section 4.7.3 requires that "[e]ach state shall install and operate at least one $PM_{2.5}$ site to monitor for regional background levels and at least one $PM_{2.5}$ site to monitor for regional transport." The 2016 Network Plan identifies the Crossville site (AQS ID 01-149-1003) in Dekalb County as a rural background site, and the Ashland site (AQS ID 01-027-0001) in Clay County as a regional transport site. Regulatory FRM monitors are operated at these two sites. ADEM has satisfied the requirements for regional background and transport sites.

$PM_{2.5}$ Chemical Speciation Network (CSN)
40 CFR Part 58, Appendix D, Section 4.7.4

In 2015, the EPA conducted an assessment of the CSN in an effort to optimize the network and create a network that is sustainable going forward. As a result of this assessment, the EPA defunded a number of monitoring sites, eliminated CSN $PM_{2.5}$ mass measurements, reduced the frequency of carbon blanks, reduced sample frequency at some monitoring sites, and reduced the number of icepacks in shipment during cooler months of the year. As noted in the Network Plan, the following CSN monitors at two monitoring sites in Alabama were defunded and have been shutdown: the Huntsville Old Airport site (AQS ID 01-089-0014) and the Montgomery MOMS site (AQS ID 01-101-1002). The remaining CSN network, with sites in Birmingham (AQS ID 01-073-0023 and 01-073-2003) and Phenix City (AQS ID 01-113-0001), meets the requirements.

Photochemical Assessment Monitoring Station (PAMS)
40 CFR Part 58, Appendix D, Section 5.0

With the passage of a new O_3 NAAQS on October 1, 2015, the EPA also finalized changes to the PAMS program. By June 1, 2019, the NCore site in Birmingham will be required to implement PAMS monitoring. While the EPA recognizes there are several implementation challenges to work through, we will work closely with ADEM and the JCDH to minimize the burden of implementing this new monitoring program. At this time, however, there is no PAMS requirement for the state of Alabama.

Other Concerns

On page 7 of the Network Plan ADEM indicates that 40 CFR Part 58, Appendix E siting criteria are being met at all sites operated in Alabama. However, other than pictures no additional evidence of that was provided, such as information on the heights of obstructions and distances from the probes or inlets to those obstructions. Because most of these sites are used in regulatory decision-making, evaluating the conditions at these monitoring sites on an ongoing basis is critically important to ensure the data collected are of sufficient quality. The EPA requests that next year's plan include recent pictures of all sites with a statement indicating that the siting criteria for each site have been evaluated, the dates on which the evaluations occurred, and whether the sites meet or do not meet the current requirements. If sites do not meet the current requirements, a statement on the corrections that need to be made and a schedule of when these corrections will be made should be included. The EPA can share with ADEM examples of how other agencies are meeting this requirement in the context of their annual network plans, if that would be beneficial.

We have been conducting a review of all metadata in AQS for all Region 4 agencies. We have identified the following metadata that should be updated and included in the Network Plan submitted by July 1, 2017. This affects all three agencies.

AGENCY	AQS ID	COUNTY	SITE NAME	COMMENTS
ADEM	01-101-1002	Montgomery	MOMS	Update Latitude and Longitude
	01-033-1002	Colbert	Muscle Shoals	Update Latitude and Longitude
	01-055-0010	Etowah	Gadsden	Update Latitude and Longitude
JCDH	01-073-0028	Jefferson		Add END DATE
	01-073-1005	Jefferson	McAdory	Update Latitude and Longitude
HDNREM	01-089-0002	Madison		Add Local Site Name
	01-089-0003	Madison		Add Local Site Name
	01-089-0004	Madison		Add Local Site Name

LANCE R. LEFLEUR
DIRECTOR

ROBERT J. BENTLEY
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July 08, 2015

Beverly Banister, Director
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Atlanta, GA 30303

Dear Ms. Banister:

In accordance with 40 CFR 58.10, the Alabama Department of Environmental Management (ADEM), the Jefferson County Department of Health (JCDH), and the Huntsville Division of Natural Resources and Environmental Management (HDNREM) have prepared a consolidated Annual Network Plan for the State of Alabama. The plan was placed on the ADEM website on May 17, 2016, to start a 30 day public review period. The review period concluded at the close of business on June 20, 2016.

During the 30 day public review period, ADEM received comments from several individuals and organizations. ADEM and JCDH reviewed the comments and responded to the commenters. No changes were made to the plan based on these comments.

Appendix D of the plan included proposed site placement for an SO2 monitor to comply with the Data Requirements Rule for the Lhoist facility. After consultation with Region 4 staff and further modeling and analysis by Lhoist's contractor, ADEM has determined that an alternate location near the facility would be more appropriate. ADEM intends to revise Appendix D and provide an additional 30 days for public review for this portion of the plan.

The following items will be submitted electronically to Todd Rinck and Darren Palmer:

Public Comments/ADEM Response
2016 Annual Network Plan
Air Monitoring Equipment Evaluations

If I can provide additional information please contact me at (334) 260-2747.

Sincerely,

Mike Malaier, Chief
Air Assessment Unit
Field Operations Division

Email: Todd Rinck, Chief, Air Data & Analysis Section (rinck.todd@epa.gov)
Email: Daren Palmer, Air Data & Analysis Section (Palmer.Darren@epa.gov)

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ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AVAILABILITY FOR REVIEW

THE 2016 ANNUAL AMBIENT AIR MONITORING PLAN

Pursuant to 40 CFR 58.10, ADEM has prepared the Annual Ambient Air Monitoring Plan for 2016. This plan covers ambient air monitoring activities to be performed by the Alabama Department of Environmental Management (ADEM), the Jefferson County Department of Health, and the City of Huntsville Division of Natural Resources.

Beginning May 17, 2016, the plan is available for public inspection electronically via http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf and at the following location Monday – Friday (except legal holidays), 8:00 am to 5:00 pm. A nominal fee for copying and/or mailing may be charged. Arrangements for copying should be made in advance. Comments will be received until June 20, 2016 at 5:00pm.

Request for copies or comments on the plan should be directed to:

Michael E. Malaier, Chief

Air Assessment Unit

Field Operations Division

Alabama Department of Environmental Management

P.O. Box 301463, Montgomery, AL 36130-1463

(street address: 1350 Coliseum Boulevard, Montgomery, AL 36110-2059)

or by e-mail at mml@adem.state.al.us.

State of Alabama
Ambient Air Monitoring
2016 Consolidated Network Review

HUNTSVILLE
The Star of Alabama

ADEM
Alabama Department of Environmental Management

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Definitions and Acronyms

AAQM	Ambient Air Quality Monitoring
AAQMP	Ambient Air Quality Monitoring Plan
ADEM	Alabama Department of Environmental Management
Appendix D	Volume 40, Code of Federal Regulations, part 58, Appendix D
AQS	Air Quality System
Avg	average
B'ham	Birmingham
CBSA	Core Based Statistical Area
CFR	*Code of Federal Regulations*
CO	Carbon Monoxide
CSA	Combined Statistical Area
CSN	Chemical Speciation Network
EPA	Environmental Protection Agency
FEM	Federal Equivalent Method
FRM	Federal Reference Method
HDNREM	Huntsville Division of Natural Resources and Environmental Management
hr	hour
hi-vol	high-volume PM_{10} sampler
JCDH	Jefferson County Department of Health
Low-vol	low-volume particulate sampler
m_3	cubic meter
min	minute
ml	milliliter
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NCore	National Core multipollutant monitoring stations
O_3	ozone
PAMS	Photochemical Assessment Monitoring Stations
Pb	lead
PM	particulate matter
$PM_{2.5}$	particulate matter $\leq$2.5 micrometers diameter
PM_{10}	particulate matter $\leq$10 micrometer diameter
$PM_{10\text{-}2.5}$	particulate matter $\leq$10 microns but > 2.5 microns
PSD	Prevention of Significant Deterioration
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
SLAMS	State or Local Air Monitoring Station
SO_2	Sulfur Dioxide
SPM	Special Purpose Monitor
STN ($PM_{2.5}$)	Speciation Trends Network
TEOM	Tapered Element Oscillating Microbalance (Rupprecht and Patashnick Co.)
tpy	tons per year
TSP	Total Suspended Particulate
URG	URG-3000N $PM_{2.5}$ Speciation monitoring carbon-specific sampler
USEPA	United States Environmental Protection Agency
° C	degree Celsius
$\mu g/m^3$	micrograms (of pollutant) per cubic meter (of air sampled)
$\geq$	greater than or equal to
>	greater than
$\leq$	less than or equal to
<	less than

Introduction

In October 2006, the United States Environmental Protection Agency (EPA) issued final Federal Regulations (40 CFR Part 58) concerning state and local agency ambient air monitoring networks. These regulations require states to submit an annual monitoring network review to EPA. This document provides the framework for establishment and maintenance of Alabama's air quality surveillance system, lists changes that occurred during 2015, and changes proposed to take place to the current ambient air monitoring network during 2016/2017.

Public Review and Comment

The annual monitoring network review must be made available for public inspection for thirty (30) days prior to submission to EPA. For 2016, this document was placed on ADEM's website on May 17, 2016 to begin a 30-day public review period. This document can be accessed at the following link:

http://www.adem.state.al.us/newsEvents/publicNotices.cnt
then choose this document.

Or by contacting:

Michael E. Malaier, Chief
Air Assessment Unit
Field Operations Division
Alabama Department of Environmental Management
P.O. Box 301463, Montgomery, AL 36130-1463
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Overview of Alabama's Air Monitoring Network

Ambient air monitors in the state of Alabama are operated for a variety of monitoring objectives. These objectives include determining whether areas of the state meet the National Ambient Air Quality Standards (NAAQS), to provide public information such as participation in EPA's AirNow program, Air Quality Index (AQI) reporting for larger Metropolitan Statistical Areas (MSAs), for use in Air Quality models and to provide data to Air Quality Researchers. Alabama monitors the six (6) criteria pollutants which have NAAQS identified for them; Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO_2), Ozone (O_3), particulate matter (PM_{10}, $PM_{2.5}$, and $PM_{10-2.5}$), and Sulfur Dioxide (SO_2). There are other non-criteria pollutants, such as $PM_{2.5}$ speciated compounds, that are also monitored for special purposes. In addition, meteorological data is also collected to support the monitoring and aid in analysis of the ambient air monitoring data.

In Alabama, the air quality surveillance system is operated by the state environmental agency, Alabama Department of Environmental Management (ADEM), and two local agencies, the Jefferson County Department of Health (JCDH), and the Huntsville Department of Natural Resources and Environmental Management (HDNREM). . Each agency has performed the required annual review of their portion of the current ambient air quality network and developed a proposed network plan to be implemented during 2016. This document is a compilation of reports from each agency.

Currently, the Air Quality Index (AQI) is reported for Huntsville, Birmingham, Mobile, Montgomery and Phenix City on the Internet at the sites listed below.

ADEM	http://www.adem.state.al.us/programs/air/airquality/ozone/historical.cnt
JCDH	http://www.jcdh.org/EH/AnR/AnR03.aspx
HDNREM	http://www.hsvcity.com/NatRes/Pollen/polindex.htm#DAQ

An overview of the 2016 Alabama Monitoring Network can be seen in Table 1.

Summary of findings of the 2016 Network Review

ADEM

Summary of changes in ADEM in 2015

- MOMS (AQS ID 01-101-1002) discontinued monitoring for the Chemical Speciation Network (CSN) due to a low Primary Objectives Score. More information concerning the CSN may be found at https://www3.epa.gov/ttnamti1/speciepg.html.
- The Phenix City $PM_{2.5}$ monitoring site (AQS ID 01-113-0001) had to be moved due to loss of access to the site. With consultation with US EPA, the site was moved to 1319 9th Avenue, Phenix City within 1/3 mile of the previous location. The public review period was closed on March 10, 2016 with no comments received. ADEM is awaiting a response from EPA.

Proposed changes for ADEM in 2016

- ADEM received written notification in April, 2016, that they must relocated the DBT (AQS ID: 01-051-0001) Ozone monitor shelter from the current location. ADEM is in the process of reviewing potential locations, including a new site only 160 meters away. When a new site is selected ADEM will follow EPA guidance for network modification.
- Planned SO2 DRR monitoring at North America of Alabama, LLC – Montevallo Plant, located in Calera, Birmingham-Hoover MSA

HDNREM

Summary of changes in HDNREM in 2015

- Old Airport Road site (AQS ID 01-101-1002) discontinued monitoring for the Chemical Speciation Network (CSN) due to a low Primary Objectives Score. More information concerning the CSN may be found at https://www3.epa.gov/ttnamti1/speciepg.html

Proposed changes for HDNREM in 2016

- No changes are planned for the Huntsville Air Monitoring Network.

JCDH

Summary of changes for JCDH in 2015

- Replacement of shelters at Wylam and Tarrant
- Discontinued monitoring of $PM_{2.5}$ and CO at Shuttlesworth
- Discontinued monitoring for Low Vol PM10 at Tarrant, Fairfield, Sloss Shuttlesworth and McAdory.

Summary of changes for JCDH in 2016

- Planned SO2 DRR Monitoring at Shuttlesworth for One Year
- Replacement of shelters at Shuttlesworth North Birmingham
- Addition of $PM_{2.5}$ continuous monitor at Shuttlesworth
- Discontinuation of Pb monitoring at the North Birmingham NCore site

Network Modification Plan

The 2016 revision to 40 CFR 58 included the following section concerning the 5-year network assessment.

> **§58.14 System modification.**
>
> (a) The state, or where appropriate local, agency shall develop a network modification plan and schedule to modify the ambient air quality monitoring network that addresses the findings of the network assessment required every 5 years by §58.10(d). The network modification plan shall be submitted as part of the Annual Monitoring Network Plan that is due no later than the year after submittal of the network assessment.

Alabama completed the required network assessment in July of 2015.

EPA has created a website for publishing plans and assessments.

https://www3.epa.gov/ttnamti1/5yrnetassess.html

Findings from the Five Year Ambient Air Monitoring Network Assessment for the State of Alabama

While the 2015 Ambient Air Quality Monitoring Plan shows several of the current monitors are no longer required by Appendix D due to a reduction in ambient concentrations in recent years, the site matrix analysis shows that most of the monitors are still important in the network. The current network provides broad coverage across Alabama and also provides more intensive monitoring in areas of higher population and emissions.

Ozone

Due to expected changes to the level of the NAAQS for ozone, no changes are planned to the network at this time. If resources allow for an additional site, the Auburn area would be a likely candidate. No additional funding has been identified to operate a new site.

PM 10

Due to the very low concentrations recorded and the aging equipment and infrastructure at the Mobile sites ADEM closed a continuous PM_{10} monitor in Chickasaw and a manual PM10 monitor at WKRG and JCDH closed 3 manual PM_{10} monitors. There are no additional modifications planned at this time.

SO2

ADEM currently operates one monitor which meets Appendix D requirements. With the promulgation of the Data Requirements Rule (DRR), all identified large source industries had to declare if they were modeling or monitoring to show compliance. ADEM is working on monitor siting placement with those large-source industries which chose to monitor.

PM 2.5, NO2, CO, and Pb

Since the current network meets or exceeds Appendix D requirements, no modifications to the network are foreseen at this time.

Table 1 - 2016 Alabama Monitoring Network

Site Common Name	AQS ID	Ozone	PM2.5	PM 2.5 collocated	PM2.5 Spec.	BAM (Cont. PM2.5)	TEOM (Cont. PM2.5)	PM 10 LoVol	PM10 LoVol Collocated	PM10	PM10 collocated	PM 10 Continuos	Lead	Lead Collocated	Lead-PM10	SO2	NO2	NOy	CO
JCDH Sites																			
North Birmingham (NCore)	01-073-0023	x	x	x	x	x		x	x			x	x	x	x	x	x	x	x
Fairfield	01-073-1003	x														x			x
McAdory School	01-073-1005	x	x	x			x												
Leeds Elem. School	01-073-1010	x	x	x			x	x											
Wylam	01-073-2003		x	x	x		x	x	x			x							
Hoover	01-073-2006	x					x												
Corner High School	01-073-5003	x					x												
Tarrant Elem. School	01-073-6002	x						x				x							
Sloss Shuttlesworth	01-073-6004						x					x							
Arkadelphia (Near Road)	01-073-2059		x														x		x
ADEM Sites																			
Fairhope	01-003-0010	x	x																
Ashland	01-027-0001		x																
Muscle Shoals	01-033-1002	x	x																
Crossville	01-049-1003		x																
DBT	01-051-0001	x																	
Gadsden - CC	01-055-0010		x			x													
Southside	01-055-0011	x																	
Dothan -CC	01-069-0003		x																
Dothan	01-069-0004	x																	
Mobile - Chickasaw	01-097-0003	x	x			x										x			
Mobile - Bay Road	01-097-2005	x																	
Montgomery - MOMS	01-101-1002	x	x	x						x	x								
Decatur	01-103-0011	x	x			x													
Troy	01-109-0003												x	x					
Phenix City - Downtown	01-113-0001		x	x	x	x													
Phenix City - Ladonia	01-113-0002	x																	
Helena	01-117-0004	x																	
Ward, Sumter Co.	01-119-0003	x				x													
Childersburg	01-121-0002		x																
Tuscaloosa - VA Hospital	01-125-0004		x			x													
Duncanville, Tuscaloosa	01-125-0010	x														x			
HDNR Sites																			
Pulaski Pike (Fire station #10)	01-089-0002									x									
Downtown Garage (Madison S	01-089-0003									x									
South Parkway (Fire Station #7	01-089-0004									x									
Huntsville Old Airport Road	01-089-0014	x	x	x			x			x	x								
Capshaw	01-089-0022	x																	

Network Plan Description

As per 40 CFR Part 58.10, an annual monitoring network plan which provides for the establishment and maintenance of an air quality surveillance system consisting of the air quality monitors in the state, is required to be submitted by all states to EPA.

Specifically §58.10 (a) requires for each existing and proposed monitoring site:

1. A statement of purpose for each monitor.
2. Evidence that siting and operation of each monitor meets the requirements of Appendices A, C, D, and E of 40 CFR Part 58, where applicable.
3. Proposals for any State and Local Air Monitoring Station (SLAMS) network modifications.

§58.10 (b) requires the plan contain the following information for each existing and proposed site:

1. The Air Quality System (AQS) site identification number.
2. The location, including street address and geographical coordinates.
3. The sampling and analysis method(s) for each measured parameter.
4. The operating schedules for each monitor.
5. Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal.
6. The monitoring objective and spatial scale of representativeness for each monitor.
7. The identification of any sites that are suitable and sites that are not suitable for comparison against the annual $PM_{2.5}$ NAAQS as described in §58.30.
8. The Metropolitan Statistical Area (MSA), Core Based Statistical Area (CBSA), Combined Statistical Area (CSA) or other area represented by the monitor.
9. The designation of any Pb monitors as either source-oriented or non-source-oriented according to Appendix D to 40 CFR part 58.
10. Any source-oriented monitors for which a waiver has been requested or granted by the U.S. EPA Regional Administrator as allowed for under paragraph 4.5(a)(ii) of Appendix D to 40 CFR part 58.
11. Any source-oriented or non-source-oriented site for which a waiver has been requested or granted by the U.S.EPA Regional Administrator for the use of Pb-PM_{10} monitoring in lieu of Pb-TSP monitoring as allowed for under paragraph 2.10 of Appendix C to 40 CFR part 58.

Monitoring Requirements

Appendix A of 40 CFR Part 58 outlines the Quality Assurance Requirements for SLAMS, SPMs, and PSD Air Monitoring. It details calibration and auditing procedures used to collect valid air quality data, the minimum number of collocated monitoring sites, calculations used for data quality assessments, and reporting requirements. All sites in Alabama operate following the requirements set forth Appendix A.

Appendix C of 40 CFR Part 58 specifies the criteria pollutant monitoring methods which must be used in SLAMS and NCore stations. All criteria pollutant monitoring in Alabama follow the methods specified in Appendix C.

Appendix D of 40 CFR Part 58 specifies network design criteria for ambient air quality monitoring. The overall design criteria, the minimum number of sites for each parameter, the type of sites, the spatial scale of the sites, and the monitoring objectives of the sites are detailed. In designing the air monitoring network for Alabama, the requirements of Appendix D were followed. The specifics for each pollutant network are in the their individual chapters.

Appendix E of 40 CFR Part 58 specifies the placement of the monitoring probe, it's spacing from obstructions and probe material. All monitors operated in Alabama meet Appendix E criteria.

Population and CBSA

Alabama has a 2015 population estimate of 4,858,979 of which 3,960,423 is located in the 13 MSAs listed in Table 2.

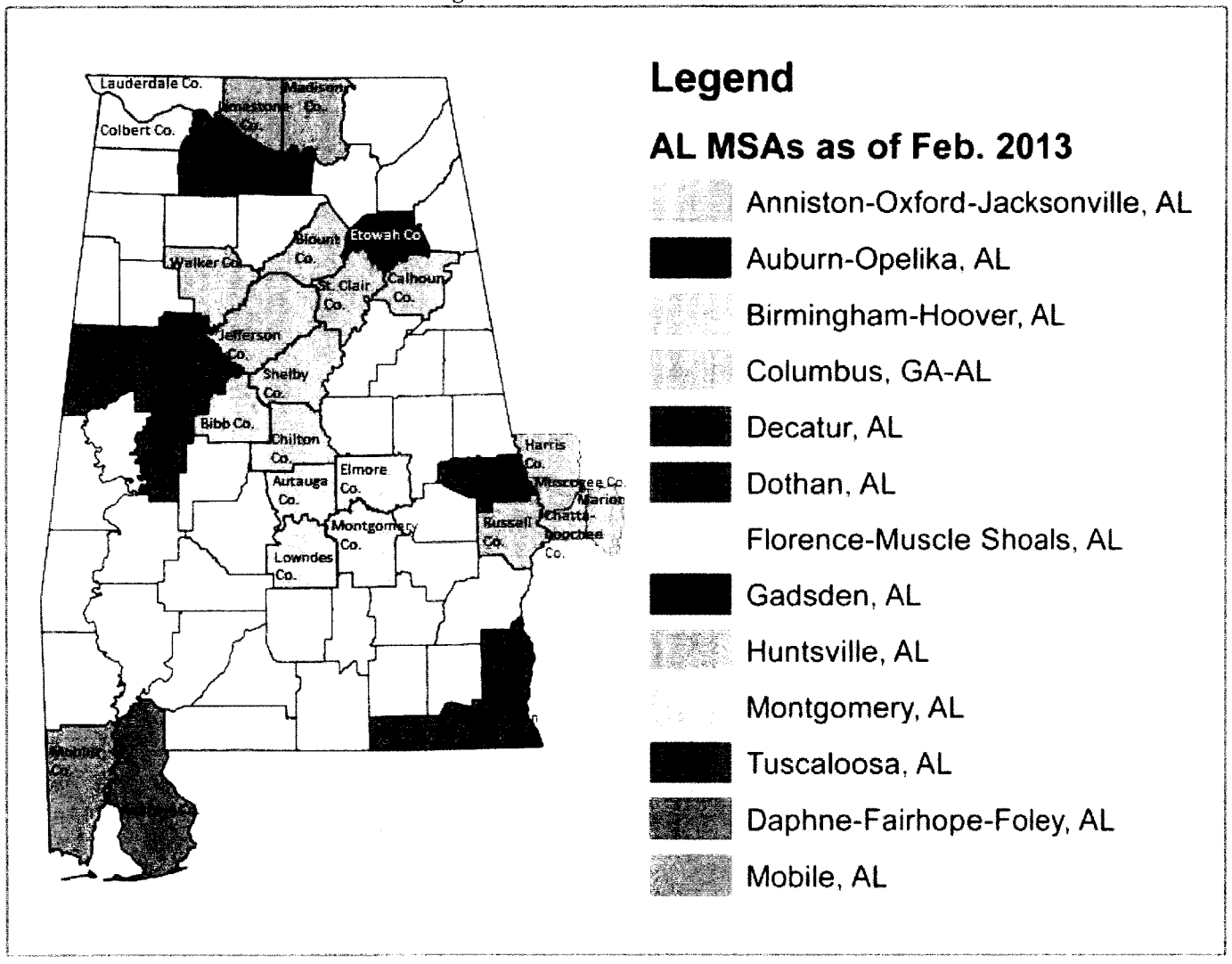
Minimum monitoring requirements vary for each pollutant and can be based on a combination of factors such as population, the level of monitored pollutants, and Core Based Statistical Area boundaries as defined in the latest US Census information. The term "Core Based Statistical Area" (CBSA) is a collective term for both Metropolitan Statistical Areas (MSA) and Micropolitan Statistical Areas (μSA).

Table 2 lists the CBSAs in Alabama along with county names included in that area, and the 2015 estimated population. The Metropolitan Statistical Areas followed by the Micropolitan Statistical Areas are listed from highest to lowest population.

Table 2 - Alabama CBSAs

Core Based Statistical Area (CBSA) Title	Counties	2015 population est.	Metropolitan/Micropolitan Statistical Area
Birmingham-Hoover, AL	Jefferson, Shelby, Bibb, Blount, Chilton, St. Clair, and Walker	1,145,647	Metropolitan Statistical Area
Huntsville, AL	Madison and Limestone	444,752	Metropolitan Statistical Area
Mobile, AL	Mobile County	415,395	Metropolitan Statistical Area
Montgomery, AL	Montgomery, Autauga, Elmore, and Lowndes	373,792	Metropolitan Statistical Area
Columbus, GA-AL	Russell County, AL and Chattahoochee County, GA, Harris County, GA, Marion County, GA, Muscogee County, GA	313,749	Metropolitan Statistical Area
Tuscaloosa, AL	Tuscaloosa, Pickens, and Hale	239,908	Metropolitan Statistical Area
Daphne-Fairhope-Foley, AL	Baldwin	203,709	Metropolitan Statistical Area
Auburn-Opelika, AL	Lee	156,993	Metropolitan Statistical Area
Decatur, AL	Lawrence and Morgan	152,680	Metropolitan Statistical Area
Dothan, AL	Henry, Geneva, and Houston	148,171	Metropolitan Statistical Area
Florence-Muscle Shoals, AL	Colbert and Lauderdale	146,950	Metropolitan Statistical Area
Anniston-Oxford-Jacksonville, AL	Calhoun	115,620	Metropolitan Statistical Area
Gadsden, AL	Etowah	103,057	Metropolitan Statistical Area
Albertville, AL	Marshall	94,725	Micropolitan Statistical Area
Talladega-Sylacauga, AL	Coosa and Talladega	91,586	Micropolitan Statistical Area
Cullman, AL	Cullman	82,005	Micropolitan Statistical Area
Scottsboro, AL	Jackson	52,419	Micropolitan Statistical Area
Enterprise, AL	Coffee	51,211	Micropolitan Statistical Area
Ozark, AL	Dale	49,565	Micropolitan Statistical Area
Selma, AL	Dallas	41,131	Micropolitan Statistical Area
Valley, AL	Chambers	34,123	Micropolitan Statistical Area
Troy, AL	Pike	33,046	Micropolitan Statistical Area

Figure 1-Alabama with MSAs as of 2013



Types of Monitoring Stations

PAMS – *Photochemical Assessment Monitoring Station*: PAMS are established to obtain more comprehensive data in areas with high levels of ozone pollution by also monitoring oxides of Nitrogen (NOx) and volatile organic compounds (VOCs). **PAMS monitoring requirements were revised in the 2016 ozone NAAQS rule and a PAMS site will be required in the state of Alabama in Jefferson County.** This site will need to be operational by 2019.

SLAMS - *State or Local Ambient Monitoring Station*: The SLAMS make up ambient air quality monitoring sites that are primarily needed for NAAQS comparisons. **Alabama SLAMS are described in detail by pollutant and monitoring agency in the section labeled Alabama's SLAMS by Pollutant.**

STN – *$PM_{2.5}$ Speciation Trends Network*: A $PM_{2.5}$ speciation station designated to be part of the speciation trends network. This network provides chemical species data of fine particulates. **There is currently one STN site located in Alabama at the North Birmingham NCore site (01-073-0023) operated by JCDH.**

Supplemental Speciation - Any $PM_{2.5}$ speciation station that is used to gain supplemental data and is not dedicated as part of the speciation trends network. **Two $PM_{2.5}$ supplemental speciation sites are located in Alabama**: Phenix City-Downtown (AQS ID 01-113-0001) operated by ADEM and Wylam (AQS ID 01-073-2003) operated by JCDH.

NCore – *National Core multi-pollutant monitoring station*: Sites that measure multiple pollutants at trace levels in order to provide support to integrated air quality management data needs. Each state is required to operate one NCore site. **The NCore site for Alabama is at the North Birmingham site (AQS ID 01-073-0023), Birmingham MSA, operated by JCDH. Additional information concerning this site can be found in the JCDH Air Monitoring Network Description.**

CASTNET – *Clean Air Status and Trends Network*: is a national air quality monitoring network designed to provide data to assess trends in air quality, atmospheric deposition, and ecological effects due to changes in air pollutant emissions. CASTNET provides long-term monitoring of air quality in rural areas to determine trends in regional atmospheric nitrogen, sulfur, and ozone concentrations and deposition fluxes of sulfur and nitrogen pollutants in order to evaluate the effectiveness of national and regional air pollution control programs. EPA-sponsored CASTNET ozone monitors are Part 58 compliant, therefore the data can be used for regulatory purposes. CASTNET Ozone data is now reported to AQS. There is one CASNET site in Alabama, Sand Mountain in DeKalb County (AQS ID 01-049-9991), operated by an EPA contractor.

Alabama's SLAMS by Pollutant

Lead Network

In 2008, EPA revised the NAAQS for lead (Pb). The Pb standard was lowered from 1.5 ug/m^3 for a quarterly average to 0.15 ug/m^3 based on the highest rolling 3-month average over a 3-year period. EPA set minimum monitoring requirements for source and population oriented monitoring. Source oriented monitoring is required near sources that have Pb emissions ≥1 ton per year. Population oriented monitoring is required for CBSAs >500,000. In December 2010, EPA revised the Pb rule to require source-oriented monitors for sources greater than ½ ton per year and stated that population oriented monitors would be located at NCore sites. In March, 2016, EPA removed the requirement for Pb monitoring at NCore sites that were not located near a Pb emissions source.

Based on current emissions data or modeling, ADEM has identified one source, Sanders Lead Co., located in Troy, Pike County (not within a CBSA), which emits greater than 1/2 ton of Pb per year. Troy (AQS ID 01-109-0003), operated by ADEM, has been monitoring for Pb near that source since 2009. To meet QA requirements, collocated lead monitoring is also occurring at this site.

Based on current emissions data, JCDH and the HDNREM have no sources that would require Pb monitoring.

Based on population requirements, North Birmingham NCore site, Birmingham-Hoover MSA (AQS ID 01-073-0023),operated by JDCH, and has been collecting Pb monitoring data since 12-29-2011. JCDH will discontinue Pb monitoring at the North Birmingham NCore site at the end of calendar year 2016.

Carbon Monoxide (CO) Network

On August 12, 2011 EPA issued a final rule that retained the existing NAAQS for Carbon Monoxide (CO) and made changes to the ambient air monitoring requirements. EPA revised the minimum requirements for CO monitoring by requiring monitors to be sited near roads in certain urban areas.

40 CFR Part 58 Appendix D, 4.2 details the requirements for CO monitoring.

> 4.2.1 General Requirements. (a) Except as provided in subsection (b), one CO monitor is required to operate collocated with one required near-road NO2 monitor, as required in Section 4.3.2 of this part, in CBSAs having a population of 1,000,000 or more persons. If a CBSA has more than one required near-road NO2 monitor, only one CO monitor is required to be collocated with a near-road NO2 monitor within that CBSA. (b) If a state provides quantitative evidence demonstrating that peak ambient CO concentrations would occur in a near-road location which meets microscale siting criteria in Appendix E of this part but is not a near-road NO2 monitoring site, then the EPA Regional Administrator may approve a request by a state to use such an alternate near-road location for a CO monitor in place of collocating a monitor at near-road NO2 monitoring site.

Those monitors required in CBSAs having 1 million or more persons are required to be operational by January 1, 2017.

Based on this, the CO monitor required to be collocated with the near road NO_2 monitor in the Birmingham-Hoover CBSA and operational by January 1, 2017 is satisfied at the Near Road Site (AQS ID 01 073 2059), operated by JCDH.

Currently CO is monitored at the following 4 sites :

Table 3 - JCDH CO Monitoring sites

AQS No.	County	Site Name	Latitude	Longitude	Start Date	Objective	Scale	Frequency
01-073-0023	Jefferson	N. B'ham, SR	33.553031	-86.814853	3/1/2000	High Pop. Exposure	Neighborhood	Continuously Year-round
01-073-1003	Jefferson	Fairfield, PFD	33.485556	-86.915062	12/11/74	High Pop. Exposure	Neighborhood	Continuously Year-round
01-073-2059	Jefferson	Near Road Site	33.521427	-86.815000	1/1/2014	High Pop. Exposure	Micro	Continuously Year-round

Nitrogen Dioxide (NO_2) Network

On January 22, 2010 the US EPA finalized the monitoring rules for Nitrogen Dioxide (NO_2). The new rules include new requirements for the placement of new NO_2 monitors in urban areas.

These include:

Near Road Monitoring

At least one monitor must be located near a major road in each CBSA with a population ≥500,000 people. A second monitor is required near another major road in areas with either a CBSA population ≥2.5 million people, or one or more road segment with an annual average daily traffic (AADT) count ≥250,000 vehicles.

These NO_2 monitors must be placed near those road segments ranked with the highest traffic levels by AADT, with consideration given to fleet mix, congestion patterns, terrain, geographic location, and meteorology in identifying locations where the peak concentrations of NO_2 are expected to occur. Monitors must be placed no more than 50 meters (about 164 feet) away from the edge of the nearest traffic lane.

For near road NO_2 monitoring, Birmingham-Hoover is the only CBSA in Alabama with a population greater than 500,000. However, the population is less than 2.5 million and there are no road segments with AADT greater than 250,000 vehicles. Therefore, only one near road NO_2 monitor is located in the Birmingham-Hoover CBSA. JCDH has established a site at Arkadelphia Road known as Near Road Site (AQS ID 01-073-2059), that monitors for NO_2, CO and $PM_{2.5}$. The establishment of a permanent near-road NO_2 monitoring site, meeting design and siting criteria as specified in 40 CFR Part 58 was operational by January 1, 2014.

Community Wide Monitoring

A minimum of one monitor must be placed in any urban area with a population greater than or equal to 1 million people to assess community-wide concentrations.

For community wide monitoring, Birmingham-Hoover is the only CBSA in Alabama with a population greater than 1 million, thereby requiring one NO_2 monitor. North Birmingham NCore (AQS ID 01-073-0023), operated by JCDH, monitors for NO_y and NO_2 based on community wide requirements.

Sulfur Dioxide (SO_2) Network

Effective August 23, 2010, EPA strengthened the primary National Ambient Air Quality Standard (NAAQS) for sulfur dioxide (SO_2). EPA established a new 1-hour standard at a level of 75 parts per billion (ppb), based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

According to EPA, for a short-term 1-hour SO_2 standard, it is more technically appropriate, efficient, and effective to use modeling as the principal means of assessing compliance for medium to larger sources, and to rely more on monitoring for groups of smaller sources and sources not as conducive to modeling. Such an approach is consistent with EPA's historical approach and longstanding guidance for SO_2. EPA is setting specific minimum requirements that inform states on where they are required to place SO_2 monitors. The final monitoring regulations require monitors to be placed in Core Based Statistical Areas (CBSAs) based on a Population Weighted Emissions Index (PWEI) for the area. The final rule requires:

3 monitors in CBSAs with PWEI values of 1,000,000 or more;

2 monitors in CBSAs with PWEI values less than 1,000,000 but greater than 100,000; and

1 monitor in CBSAs with PWEI values greater than 5,000.

According to the latest PWEI calculations listed in Table 4, only the Birmingham-Hoover and Mobile CBSAs require SO_2 monitoring.

The Birmingham-Hoover CBSA requires two SO_2 monitors. North Birmingham NCore (AQS ID 01-073-0023) and Fairfield (AQS ID 01-073-1003), operated by JCDH, monitor for SO_2 to fulfill the requirement.

The Mobile CBSA requires one SO_2 monitor. Chickasaw (AQS ID 01-097-0003), operated by ADEM since 01/01/2013, monitors for SO_2 to fulfill the requirement.

Effective September 21, 2015, per 40 CFR Part 51, states are required to report all sources that generate >2,000 tpy SO_2, not dependent upon population density. For each source in this category, air quality must be determined through air quality modeling or ambient air monitoring. For sources that are characterized by monitoring operation of the site must be equivalent with the SLAMS requirements of 40 CFR Part 58. Source-oriented monitoring for SO_2 is required to commence on January 1, 2017. This option is only available in areas that are currently in attainment.

ADEM has identified one source that will be characterized by monitoring, Lhoist North America of Alabama, LLC – Montevallo Plant, located in Calera, Birmingham-Hoover MSA. Modeling was done to identify the ideal monitor placement and is currently under evaluation by the department. Further details about this site and the selection process can be found in APPENDIX D. When ADEM receives concurrence of the site selection from EPA, the site will be set up and become operational by January 1, 2017.

Table 4 - CBSA's PWEI and number of monitors required
Population Weighted Emissions Index (PWEI) Calculations
April 2016 - Using 2015 Census Estimates & 2011 NEI

CBSA Name	2011 NEI SO_2 (tpy)	Population (2015)	PWEI in Million persons-tpy	Required Monitors
Birmingham-Hoover, AL	115,337	1,145,647	132,135	2
Mobile, AL	18,726	415,395	7,779	1
Florence-Muscle Shoals, AL	18,642	146,950	2,739	0
Montgomery, AL	3,982	373,792	1,488	0
Columbus, GA-AL	3,696	313,749	1,160	0
Decatur, AL	4,881	152,680	745	0
Talladega-Sylacauga, AL	5,274	91,586	483	0
Gadsden, AL	3,949	103,057	407	0
Scottsboro, AL	6,497	52,419	341	0
Cullman, AL	3,487	82,005	286	0
Troy, AL	8,066	33,046	267	0
Tuscaloosa, AL	1,045	239,908	251	0
Huntsville, AL	284	444,752	126	0
Daphne-Fairhope-Foley, AL	213	203,709	43	0
Dothan, AL	221	148,171	33	0
Selma, AL	773	41,131	32	0
Auburn-Opelika, AL	189	156,993	30	0
Anniston-Oxford, AL	216	115,620	25	0
Albertville, AL	81	94,725	8	0
Ozark	106	49,565	5	0
Valley, AL	138	34,123	5	0
Enterprise-Ozark, AL	87	51,211	4	0

PM_{10} Network

PM_{10} has been a criteria pollutant since 1987. Since that time there has been widespread monitoring of the PM_{10} levels in Alabama. In 2006, the US EPA modified the NAAQS for PM_{10} to revoke the annual standard. Currently, there is still a daily standard of 150 ug/m^3 based on 3 years of data. All monitors in the state have recorded PM_{10} levels that meet the NAAQS. Table 6 shows the minimum monitoring requirements.

Table 5 - Appendix D to part 58 PM_{10} Minimum Monitoring Requirements

TABLE D–4 OF APPENDIX D TO PART 58

PM_{10} MINIMUM MONITORING REQUIREMENTS
(NUMBER OF STATIONS PER MSA)[1]

Population category	High concentration[2]	Medium concentration[3]	Low concentration[4,5]
>1,000,000	6–10	4–8	2–4
500,000–1,000,000	4–8	2–4	1–2
250,000–500,000	3–4	1–2	0–1
100,000–250,000	1–2	0–1	0

1 Selection of urban areas and actual numbers of stations per area within the ranges shown in this table will be jointly determined by EPA and the State Agency.
2 High concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding the PM_{10} NAAQS by 20 percent or more.
3 Medium concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding 80 percent of the PM_{10} NAAQS.
4 Low concentration areas are those for which ambient PM_{10} data show ambient concentrations less than 80 percent of the PM10 NAAQS.
5 These minimum monitoring requirements apply in the absence of a design value.

The Birmingham-Hoover MSA has a population >1,000,000 and PM_{10} concentrations $\geq$ 80 percent of the PM_{10} National Ambient Air Quality Standards (NAAQS). According to table 6 above, the Birmingham-Hoover MSA is in the medium concentration range and is required to operate between 4 and 8 PM_{10} monitoring sites. Due to historically low PM_{10} concentrations and lower population in Walker, Shelby, and Chilton Counties, these required sites are located in Jefferson County and operated by JCDH where the population and emissions are primarily concentrated. Currently, JCDH operates PM10 monitors at five sites which are acceptable for comparison to the NAAQS.

At the North Birmingham NCore site (AQS ID 01 073 0023) JCDH operates three PM10 monitors, the primary monitor on a 1 in 3 day schedule, a collocated monitor on a 1 in 6 day schedule and one continuous monitor. The collocated pair of PM_{10} monitors (PQ200s) at the North Birmingham NCore site will continue to be operated at local conditions for lead monitoring. Leeds Elem. School (AQS ID 01-073-1010) has one PM_{10} monitor on a 1 in 6 day schedule. Wylam (AQS ID 01 073 2003) has three PM_{10} monitors: a primary and collocated low volume monitor on a 1 in 6 day schedule and a continuous monitor. Tarrant Elementary School (AQS ID 01 073 6002) has two PM_{10} monitors: one low volume monitor on a 1 in 3 day schedule and one continuous monitor. Sloss Shuttlesworth (AQS ID 01-073-6004) has one continuous PM_{10} monitor.

All other monitors in Alabama have indicated the PM_{10} levels to be in the low concentration range. According to Table 5, Columbus, GA-AL, Huntsville, Mobile and Montgomery MSAs, with populations between 250,000 and 500,000, are required to have 0 to 1 monitors.

The Huntsville MSA has three hi-volume PM_{10} monitors which are comparable to the NAAQS. These are located at Pulaski Pike-Fire St. #10 (AQS ID 01-089-0002), South Parkway-Fire St. #7 (AQS ID 01-089-0004) and Huntsville Old Airport (AQS ID 01-089-0014). Huntsville also operates a continuous hi-volume PM_{10} monitor at the Old Airport Road site. Additionally, HDNREM operates a special purpose hi-volume PM_{10} monitor at the Downtown Garage Site (AQS ID 01-089-0003) for daily reporting to the public only, not for NAAQS comparison.

The Montgomery MSA has one site at MOMS (AQS ID 01-101-1002) with two PM_{10} monitors, one of them being the quality assurance monitor, operated by ADEM.

Ozone Network

Effective December 28, 2015 the level of the NAAQS for ozone was changed from 0.075 to 0.070 ppm. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.070 ppm.

Minimum monitoring requirements for ozone are based on population and whether the design value is < 85% of the NAAQS, or ≥85% of the NAAQS (See Table 6). Since the NAAQS for ozone is 0.070 parts per million of ozone then 85% of the NAAQS truncated is **0.059** ppm

Table 6 - Appendix D to Part 58. SLAMS Minimum O3 Monitoring Requirements

TABLE **D–2** OF APPENDIX D TO PART 58
SLAMS MINIMUM **O3** MONITORING REQUIREMENTS

MSA population[1, 2]	Most recent 3-year design value concentrations ≥85% of any **O3** NAAQS[3]	Most recent 3-year design value concentrations <85% of any **O3** NAAQS[3,4]
>10 million	4	2
4–10 million	3	1
350,000–<4 million	2	1
50,000–<350,000[5]	1	0

1 Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).
2 Population based on latest available census figures.
3 The ozone (O3) National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.
4 These minimum monitoring requirements apply in the absence of a design value.
5 Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

Table 7 lists Alabama's Ozone sites, AQS ID, 2013-2015 Ozone Design Values, MSA name, maximum design value of the MSA, number of Ozone monitors required by the CFR, and the current number of Ozone monitors.

Table 7- Alabama MSAs with Ozone Monitoring Sites and current Design Value

Site Name	AQS ID	2013-2015 Design Values	MSA	MSA Max DV	# of sites required per CFR	Current # of sites
North Birmingham NCore	01-073-0023	0.064	Birmingham-Hoover	0.067	2	8
Fairfield	01-073-1003	0.065				
McAdory School	01-073-1005	0.064				
Leeds Elem. School	01-073-1010	0.063				
Hoover	01-073-2006	0.065				
Corner High School	01-073-5003	0.063				
Tarrant Elem. School	01-073-6002	0.067				
Helena	01-117-0004	0.065				
Ladonia, Phenix City	01-113-0002	0.061	Columbus, GA-Phenix City, AL	0.061	1	2*
Columbus, GA, Airport	13-215-0008	0.061				
Decatur	01-103-0011	0.061	Decatur	0.061	1	1
Dothan	01-069-0004	0.060	Dothan	0.06	1	1
Fairhope	01-003-0010	0.065	Daphne-Fairhope	0.065	1	1
Muscle Shoals	01-033-1002	0.058	Florence-Muscle Shoals	0.058	1	1
Southside	01-055-0011	0.059	Gadsden	0.059	0	1
Huntsville Old Airport	01-089-0014	0.063	Huntsville	0.063	2	2
Huntsville Capshaw Rd	01-089-0022	0.061				
Mobile - Chickasaw	01-097-0003	0.062	Mobile	0.065	2	2
Mobile - Bay Road	01-097-2005	0.065				
DBT	01-051-0001	0.060	Montgomery	0.062	2	2
Montgomery - MOMS	01-101-1002	0.062				
Duncanville, Tuscaloosa	01-125-0010	0.059	Tuscaloosa	0.059	0	1
Ward, Sumter Co Background)	01-119-0003	0.057	not in MSA	NA		1
Sand Mtn. **	01-049-9991	0.065	not in MSA	NA		
No monitor			Anniston-Oxford	NA	0	
No monitor			Auburn-Opelika	NA	0	

*1 in AL and 1 in GA
** CASTNET site operated by EPA contractor.

DV ≥ 85% of the NAAQS

Ozone Monitoring requirements for Alabama MSAs

Birmingham-Hoover MSA

Using the 2015 Birmingham-Hoover MSA population estimate (Table 2) and the design value from Table 7, two Ozone monitors are required in this MSA. There are currently eight Ozone sites in this MSA. One site, Helena (AQS ID 01-117-0004), operated by ADEM, is located in Shelby County. Seven sites, North Birmingham NCore (AQS ID 01-073-0023), Fairfield (AQS ID 01-073-1003), McAdory School (AQS ID 01-073-1005), Leeds Elementary School (AQS ID 01-073-1010), Hoover (AQS ID 01-073-2006), Corner High School (AQS ID 01-073-5003) and Tarrant Elementary School (AQS ID 01-073-6002), operated by JCDH, are located in Jefferson County. Additional information about these monitors is found in the JCDH Network description. No changes are planned for this MSA.

Columbus, GA/AL MSA

Using the Columbus GA/AL MSA population estimate in 2015 (Table 2) and the design value from Table 7, one Ozone monitor is required for this MSA. There are currently two Ozone sites in this MSA. One site, Ladonia (01-113-0002), operated by ADEM, is west of Phenix City in Russell County, and the other site, Columbus, GA, Airport (AQS ID 13-215-0008), operated by Georgia Environmental Protection Division, is located in Georgia. No changes are planned for this MSA.

Decatur MSA

Using the Decatur MSA population estimate in 2015 (Table 2) and the design value from Table 7, one Ozone monitor is required for this MSA. There is currently one Ozone site, Decatur (01-103-0011), operated by ADEM. No changes are planned for this MSA.

Dothan MSA

Using the Dothan MSA population estimate in 2015 (Table 2) and the design value from Table 7, one Ozone monitor is required for this MSA. There is currently one Ozone site, Dothan (01-069-0004), operated by ADEM. No changes are planned for this MSA.

Daphne-Fairhope-Foley MSA

Using the Daphne-Fairhope-Foley MSA population estimate in 2015 (Table 2) and the design value from Table 7, one Ozone monitor is required for this MSA. There is currently one Ozone site, Fairhope (01-003-0010), operated by ADEM. No changes are planned for this MSA.

Florence-Muscle Shoals MSA

Using the Florence-Muscle Shoals MSA population estimate in 2015 (Table 2) and the design value from Table 7, no Ozone monitors are required for this MSA. There is currently one Ozone site, Muscle Shoals (01-033-1002), operated by ADEM. No changes are planned for this MSA.

Gadsden MSA

Using the Gadsden MSA population estimate in 2015 (Table 2) and the design value from Table 7, one Ozone monitor is required for this MSA. There is currently one Ozone site, Southside (01-055-0011), operated by ADEM. No changes are planned for this MSA.

Huntsville MSA

Using the Huntsville MSA population estimate in 2015 (Table 2) and the design value from Table 7, two Ozone monitors are required for this MSA. There are currently two Ozone sites, Huntsville Old Airport (01-089-0014) and Huntsville Capshaw Rd (01-089-0022), operated by HDNREM. No changes are planned for this MSA.

Mobile MSA

Using the Mobile MSA population estimate in 2015 (Table 2) and the design value from Table 7, two Ozone monitors are required for this MSA. There are currently two Ozone sites, Chickasaw (01-097-0003) and Bay Road (01-097-2005), operated by ADEM. No changes are planned for this MSA.

Montgomery MSA

Using the Montgomery MSA population estimate in 2015 (Table 2) and the design value from Table 7, two Ozone monitors are required for this MSA. There are currently two Ozone sites, MOMS (01-101-1002) and DBT, Wetumpka (01-051-0001), operated by ADEM. ADEM received written notification on April, 2016, that they must relocate the site DBT (AQS ID: 01-051-0001) from the current location. Per our lease agreement, ADEM has 90 days to relocate the site, either to an adjacent property or a new site in Elmore County. Any changes will be sent out for public comment prior to EPA submission.

Tuscaloosa MSA

Using the Tuscaloosa MSA population estimate in 2015 (Table 2) and the design value from Table 7, one Ozone monitor is required for this MSA. There is currently one Ozone site, Duncanville (01-125-0010), operated by ADEM. No changes are planned for this MSA.

Auburn-Opelika and Anniston-Oxford MSAs

The MSAs of Auburn-Opelika and Anniston-Oxford were evaluated by ADEM. Both MSAs have populations less than 160,000. It was determined that due to the close proximity of ozone monitors in the neighboring MSAs, additional ozone monitors would not be needed. Since these areas do not have design values, no Ozone monitors are required by Appendix D of 40 CFR 58.

Sites not located in an MSA

Sumter County represents rural, background ozone values for the state. The historical design values for this monitor have been less than 85% of the NAAQS. One Ozone site, Ward (01-119-0003), operated by ADEM, is located in Sumter County. No changes are planned for this site.

There is an Ozone monitor, located at the CASTNET site near Crossville in DeKalb County, Sand Mountain (01-149-9991), operated by EPA.

$PM_{2.5}$ Network

Minimum monitoring requirements for $PM_{2.5}$ are based on population and whether the design value is less than 85% of the NAAQS, or greater than or equal to 85% of the NAAQS (See Table 8). In addition to the FRM monitors required by Table 8, the state is required to operate a regional background and a regional transport site. Section 4.7.2 of Appendix D of 40 CFR Part 58 also requires a collocated continuous $PM_{2.5}$ monitor in each MSA that is required to have a FRM monitor. The number of collocated continuous monitors required for an MSA will be equal to at least half of the required FRM monitors for that MSA. This requirement goes away if the continuous monitor is a FEM that is labeled as the primary and comparable to the NAAQS. The state is also required to operate $PM_{2.5}$ speciation monitors to characterize the constituents of $PM_{2.5}$. The number of speciation monitors is determined in consultation with EPA Region IV. $PM_{2.5}$ design values in Table 9 are based on 2013 – 2015 data. A design value of **29.75** ug/m^3 is the lowest value which is ≥85% of the 24-hour standard of 35 ug/m^3. A design value of **10.2** ug/m^3 is the lowest value that is ≥85% of the annual standard of 12 ug/m^3(effective March 18, 2013).

Table 8 - Appendix D to Part 58, PM2.5 Minimum Monitoring Requirements

TABLE **D–5** OF APPENDIX D TO PART 58. **PM2.5** MINIMUM MONITORING REQUIREMENTS		
MSA population [1,2]	Most recent 3-year design value ≥85% of any PM2.5 NAAQS[3]	Most recent 3-year design value<85% of any PM2.5 NAAQS[3,4]
>1,000,000	3	2
500,000–1,000,000	2	1
50,000–<500,000 [5]	1	0

1 Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).
2 Population based on latest available census figures.
3 The PM2.5 National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.
4 These minimum monitoring requirements apply in the absence of a design value.
5 Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

The New $PM_{2.5}$ Rule requires CBSAs with populations greater than a million but less than 4 million operate a $PM_{2.5}$ monitor at its NO_2 near road site by January 1, 2017. The only CBSA in Alabama that requires a NO_2 near road monitoring site is the Birmingham-Hoover MSA. The requirement is satisfied by Near Road Site (AQS ID 01-073-2059), operated by JCDH.

In order to meet the continuous monitoring requirements of Appendix D, ADEM currently operates 7 MetOne BAM monitors (AQS method code 731) which do not have FEM designation. These monitors are also used for AQI submittals and for submittal to the AirNow system. Comparison with the NAAQS will be based on the FRMs at each site which are designated as the primary monitor and operate on the required frequency.

Table 9 lists Alabama's $PM_{2.5}$ sites, AQS ID, the 2013-2015 $PM_{2.5}$ 24-hour and Annual and Design Values for each site, MSA name, the 2015 estimated population of the MSAs, the Annual and 24-hour Design Value for each MSA, , the number of monitors required by the CFR and the current number of $PM_{2.5}$ monitors.

Table 9- MSAs with $PM_{2.5}$ Monitoring Sites and current Design Value

Site Name	AQS Site ID	PM2.5 24 hr DV 2013-2015	PM2.5 Annual DV 2013-2015	MSA	Annual MSA DV	24hr MSA DV	# of sites required per CFR	Current # of sites
North Birmingham NCore	01-073-0023	23	11.0	Birmingham-Hoover	11.0	23	3	7
McAdory School	01-073-1005	NA**	NA**					
Leeds Elem. School	01-073-1010	20	10.1					
Wylam	01-073-2003	20	10.5					
Sloss Shuttlesworth	01-073-6004	NA**	NA**					
Arkadelphia (Near Road)	01-073-2059	NA**	NA**					
Pelham***	01-117-0006	19	9.2					
Muscogee DH GA	13-215-0001	21	9.6	Columbus, GA/AL	10.0	22.0	0	4*
Columbus Airport GA	13-215-0008	21	9.6					
Cussetta Rd GA	13-215-0011	22	9.6					
Phenix City - Downtown	01-113-0001	20	10.0					
Decatur	01-103-0011	18	8.9	Decatur	8.9	18.0	0	1
Dothan CC	01-069-0003	18	8.1	Dothan	8.1	18.0	0	1
Fairhope	01-003-0010	17	8.6	Daphne-Fairhope-Foley	8.6	17.0	0	1
Muscle Shoals	01-033-1002	18	8.9	Florence-Muscle Shoals	8.9	18.0	0	1
Gadsden - CC	01-055-0010	19	9.3	Gadsden	9.3	19.0	0	1
Huntsville Old Airport	01-089-0014	18	8.6	Huntsville	8.6	18.0	0	1
Mobile - Chickasaw	01-097-0003	18	8.6	Mobile	8.6	18.0	0	1
Montgomery – MOMS	01-101-1002	19	9.3	Montgomery	9.3	19.0	0	1
Tuscaloosa - VA Hospital	01-125-0004	19	9.0	Tuscaloosa	9.0	19.0	0	1
Ashland	01-027-0001	20	8.4	Not in MSA	8.4	20.0	1	1
Crossville	01-049-1003	19	9.2	Not in MSA	9.2	19.0	1	1
Childersburg	01-121-0002	19	9.5	Not in MSA	9.5	19.0	0	1
Ward, Sumter Co. Background (continuous)	01-119-0003			Not in MSA			1	1
No Monitor				Anniston-Oxford	NA	NA	0	0
No Monitor				Auburn-Opelika	NA	NA	0	0

*1 in AL and 3 in GA

DV ≥ 85% of the NAAQS

*** Closed 06/2015

NA ** incomplete data set

$PM_{2.5}$ Monitoring requirements for Alabama MSAs

Birmingham-Hoover MSA

Using the Birmingham-Hoover MSA population estimate in 2015 (Table 2) and the design value from Table 9, three FRM and two continuous monitors are required for this MSA. The Pelham FRM monitor (AQS ID 01-117-0006), operated by ADEM, was closed 06/2015. JCDH operates 5 FRM monitors are located in Jefferson County, 4 collocated FRM monitors, 5 continuous monitors, 1 IMPROVE network speciation monitor, 1 STN speciation monitor, and 1 supplemental speciation monitor.

North Birmingham NCore (AQS ID 01-073-0023), has four $PM_{2.5}$ monitors: one FRM monitor on a 1 in 3 day schedule with a collocated FRM on a 1 in 6 day schedule, a continuous monitor, an IMPROVE Speciation monitor on a 1 in 3 day schedule and an STN Speciation monitor on a 1 in 3 day schedule. McAdory School (AQS ID 01-073-1005) operates three $PM_{2.5}$ monitors : one FRM on a 1 in 3 day schedule with a collocated FRM on a 1 in 6 day schedule and a continuous monitor. Leeds (AQS ID 01-073-1010) operates three $PM_{2.5}$ monitors : one FRM on a 1 in 6 day schedule with a collocated FRM on a 1 in 6 day schedule and a continuous monitor. Hoover (AQS ID 01-073-2006) operates a continuous $PM_{2.5}$ monitor. Arkadelphia Near Road Site (AQS ID 01-073-2059) operates an FRM $PM_{2.5}$ monitor on a 1 in 6 day schedule. Wylam (AQS ID 01-073-2003) operates an FRM on a 1 in 3 day schedule with a collocated FRM on a 1 in 6 day schedule, a continuous $PM_{2.5}$ monitor and a $PM_{2.5}$ STN Speciation monitor. Further details of the JCDH $PM_{2.5}$ network can be found in the Network Description section of this document.

Columbus, GA/AL MSA

Using the Columbus, GA/AL MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There are currently four FRM monitors, one collocated FRM monitor, two non-FRM/FEM/ARM continuous monitors, and two speciation monitors in this MSA. ADEM operates one FRM monitor, one collocated FRM monitor, one speciation monitor, and one FEM continuous monitor at the Phenix City, AL site (AQS ID 01-113-0001). The continuous FEM monitor was installed in March of 2016 and is not currently comparable to the NAAQS while it is in the 2-year evaluation period. The State of Georgia operates three FRM monitors, one speciation monitor and one continuous monitor in Columbus. No changes are planned for this MSA.

Daphne-Fairhope-Foley MSA

Using the Daphne-Fairhope-Foley MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There is currently one FRM monitor located at the Fairhope site (AQS ID 01-003-0010). No changes are planned for this MSA.

Decatur MSA

Using the Decatur MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There is currently one FRM monitor and one non-FEM continuous monitor located at the Decatur site (AQS ID 01-103-0011). No changes are planned for this MSA.

Dothan MSA

Using the Dothan MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There is currently one FRM monitor located at the Dothan Civic Center site (AQS ID 01-069-0003). No changes are planned for this MSA.

Florence-Muscle Shoals MSA

Using the Florence-Muscle Shoals MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There is currently one FRM monitor located at the Muscle Shoals site (AQS ID 01-003-1002). No changes are planned for this MSA.

Gadsden MSA

Using the Gadsden MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There is currently one FRM monitor and one non-FEM continuous monitor at the Gadsden C College site (AQS ID 01-055-0010). No changes are planned for this MSA.

Huntsville MSA

Using the Huntsville MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. Currently, there is one FRM, one collocated FRM monitor and one non-FRM/FEM/ARM continuous monitor, operated by HDNREM, located in this MSA. No changes are planned for this MSA.

Mobile MSA

Using the Mobile MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There is currently one FRM monitor and one non-FEM continuous monitor located at the Chickasaw site (AQS ID 01-097-0003). No changes are planned for this MSA.

Montgomery MSA

Using the Montgomery MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There is currently one FRM monitor, one collocated FRM monitor, and one non-FEM continuous monitor located at the MOMS, ADEM site (AQS ID 01-101-1002). No changes are planned for this MSA.

Tuscaloosa MSA

Using the Tuscaloosa MSA population estimate in 2015 (Table 2) and the design value from Table 9, no FRM monitor is required. There is currently one FRM monitor and one non-FEM continuous monitor located at the VA, Tuscaloosa site (AQS ID 01-125-0004). No changes are planned for this MSA.

Auburn-Opelika and Anniston-Oxford MSAs

The MSAs of Auburn-Opelika and Anniston-Oxford were evaluated to determine the need for monitors. Both MSAs have populations less than 160,000. It was determined that due to the close proximity of $PM_{2.5}$ monitors in neighboring MSAs, additional monitors would not be needed. $PM_{2.5}$ monitoring in the adjacent MSAs continue to provide adequate coverage. Since these areas do not have design values, no FRM monitors are required by Appendix D of 40 CFR Part 58.

$PM_{2.5}$ Monitors not located in MSAs

Sumter County represents rural, background $PM_{2.5}$ values for the west part of the state. A non-FEM continuous monitor is currently being operated in Ward, Sumter County. ADEM intends to maintain this site.

The Micropolitan Statistical Area of Talladega-Sylacauga is adjacent to the Anniston-Oxford and the Birmingham-Hoover MSAs. The $PM_{2.5}$ annual design value, 9.5, and the $PM_{2.5}$ 24-hour standard design value, 19.0, is less than 85% of the NAAQS. There is currently one FRM monitor located in Childersburg, Talladega County (AQS ID 01-121-0002). ADEM intends to maintain this site.

An FRM monitor located near Ashland, Clay County (AQS ID 01-027-0001), serves as a regional transport site in between the large MSAs of Birmingham-Hoover and Atlanta. The $PM_{2.5}$ annual design value, 8.4, and 24-hour standard design value, 20.0, are less than 85% of the NAAQS for this monitor. ADEM intends to maintain this site.

An FRM monitor in Crossville, DeKalb County (AQS ID 01-049-1003), represents rural, background $PM_{2.5}$ values for the northeast part of the state. The $PM_{2.5}$ annual design value, 9.2, and 24-hour standard design value, 19.0, is less than 85% of the NAAQS. ADEM intends to maintain this site.

Quality Assurance

Each of the three monitoring agencies have US EPA approved Quality Assurance Program Plans that detail the activities used to control and document the quality of the data collected. Each agency operates as an independent Primary Quality Assurance Organization (PQAO) as defined by 40 CFR Part 58. Part of the EPA required quality control program for particulate monitors is the use of collocated particulate monitors. 40 CFR Part 58, Appendix A requires a percentage of manual particulate monitors to be collocated with FRM monitors so that quality statistics can be calculated. Each agency network includes monitors for this purpose.

Monitoring Equipment Evaluation

An evaluation of the condition of ambient monitors and auxiliary equipment was performed by each of the three monitoring agencies. The equipment was categorized as "good" or "poor". As resources allow, equipment in "poor" condition will be replaced. A report of each Agency's equipment evaluation will be submitted to the US EPA by July 1 each year.

NETWORK DESCRIPTIONS

A description of the ambient air monitoring networks for each air pollution agency, followed by detailed site evaluations, will be presented in this section.

Included will be:

- AQS ID
- Address
- Latitude and Longitude
- Scale
- Type
- Monitoring Objective
- Beginning Sampling Date and Ending Sampling Date
- Method
- Operating Schedule
- Is it comparable to the NAAQS?

ADEM AIR MONITORING NETWORK DESCRIPTION

Abbreviations	
Scale	
N	Neighborhood (0.5 – 4 Kilometers)
U	Urban (overall citywide conditions, 4 -50 kilometers
R	Regional (usually rural, with homogenous geography, tens to hundreds of kilometers)
M	Middle Scale
Type	
CAS	CASNET operated by EPA
S	SLAMS
QA	QA Collocated Monitor
SPM	Special Purpose Monitor
Operating Schedule	
C	Continuous monitor
D	Daily 24-hour samples
3	1 24-hour sample every 3 days (on national schedule)
6	1 24-hour sample every 6 days (on national schedule)
Methods	
H	Hi-volume SSI sampler
L	Low Volume SSI
T	TEOM continuous monitor
B	BAM continuous monitor
U	UV photometric ozone analyzer
P	Pulsed Fluorescent
S	Hi-Volume Total Suspended Particulate monitor
G	Lead Analysis by Graphite furnace
NAAQS[1]	
Y,N	Data suitable for comparison to NAAQS

[1] Collocated monitors must be operated in the same manner as the federal reference method but one monitor at the site is designated as the main monitor for comparison to the NAAQS.

PM_{10}

Site common name	County	AQS Site ID	Address	Latitude	Longitude	SCALE	TYPE	Monitoring objective / CBSA	Date Began	Date Ended	METHOD	SCHEDULE	NAAQS	Comment
Montgomery - MOMS	Montgomery	01-101-1002	1350 Coliseum Blvd, Montgomery, AL	32.412811	-86.263394	N	S	Population Exposure/ Montgomery, AL	6/1/1993	active	S	6	Y	
Montgomery - MOMS	Montgomery	01-101-1002	1350 Coliseum Blvd, Montgomery, AL	32.412811	-86.263394	N	QA	Population Exposure/ Montgomery, AL	1/1/2013	active	S	6	Y	Collocated

Lead

Site common name	County	AQS Site ID	Address	Latitude	Longitude	SCALE	TYPE	Monitoring objective / CBSA	Date Began	Date Ended	METHOD	SCHEDULE	NAAQS	Comment
Troy	Pike	01-109-0003	Henderson Road, Troy, AL	31.790560	-85.979170	N	S	Highest Concentration / Troy,AL uSA	1/1/2009	active	S, G	6	Y	Source oriented
Troy	Pike	01-109-0003	Henderson Road, Troy, AL	31.790560	-85.979170	N	QA	Highest Concentration / Troy,AL uSA	1/1/2009	active	S, G	6	Y	Collocated

PM 2.5

Site common name	County	AQS Site ID	Address	Latitude	Longitude	SCALE	TYPE	Monitoring objective / CBSA	Date Began	Date Ended	METHOD	SCHEDULE	NAAQS	Comment
Fairhope	Baldwin	01-003-0010	Fairhope High School, Fairhope, AL	30.497478	-87.880258	M	S	Population exposure/ Daphne-Fairhope µSA	1/1/2000	active	L	3	Y	FRM
Ashland	Clay	01-027-0001	Ashland Airport	33.284928	-85.803608	R	S	Highest Concentration/ not in CBSA	1/1/1999	active	L	3	Y	FRM Regional Transport
Muscle Shoals	Colbert	01-033-1002	2nd Street and Wilson Dam Road	34.762619	-87.638097	N	S	Highest Concentration/ Florence MSA	1/1/1999	active	L	3	Y	FRM
Crossville	DeKalb	01-049-1003	13112 Hwy 68, Crossville AL	34.288567	-85.969858	N	SPM	General/background/ Fort Payne µSA	1/1/1999	active	L	3	Y	FRM
Gadsden C College	Etowah	01-055-0010	1001 Wallace Dr Gadsden, AL	33.991494	-85.992647	U	S	Population Exposure/ Gadsden MSA	1/1/2000	active	L	3	Y	FRM
Gadsden C College	Etowah	01-055-0010	1001 Wallace Dr Gadsden, AL	33.991494	-85.992647	U	S	Population Exposure/ Gadsden MSA	1/1/2014	active	B	C	N	Collocated Non-FEM Continuous
Dothan Civic Center	Houston	01-069-0003	126 North St Andrews St. Civic Center	31.224783	-85.390789	N	S	Population Exposure/ Dothan MSA	1/7/2005	active	L	3	Y	FRM
Chickasaw	Mobile	01-097-0003	Iroquois and Azalea, Chickasaw	30.770181	-88.087761	N	S	Population Exposure/ Mobile MSA	7/19/2002	active	L	3	Y	FRM
Chickasaw	Mobile	01-097-0003	Iroquois and Azalea, Chickasaw	30.770181	-88.087761	N	S	Population Exposure/ Mobile MSA	3/1/2011	active	B	C	N	Collocated Non-FEM Continuous

PM 2.5 continued

Site common name	County	AQS Site ID	Address	Latitude	Longitude	SCALE	TYPE	Monitoring objective / CBSA	Date Began	Date Ended	METHOD	SCHEDULE	NAAQS	Comment
MOMS, ADEM	Montgomery	01-101-0002	1350 Coliseum Blvd, Montgomery, AL	32.412811	-86.263394	N	S	Population Exposure/ Montgomery MSA	1/16/2009	active	L	3	Y	FRM
MOMS, ADEM	Montgomery	01-101-0002	1350 Coliseum Blvd, Montgomery, AL	32.412811	-86.263394	N	QA	Population Exposure/ Montgomery MSA	1/16/2009	active	L	6	Y	Collocated FRM
MOMS, ADEM	Montgomery	01-101-0002	1350 Coliseum Blvd, Montgomery, AL	32.412811	-86.263394	N	SPM	Population Exposure/ Montgomery MSA	4/1/2009	active	B	C	N	Collocated Non-FEM Continuous
Decatur	Morgan	01-103-0011	Wallace Ctr.Hwy 31, Decatur	34.530717	-86.967536	M	S	Population Exposure/ Decatur MSA	8/7/2001	active	L	3	Y	FRM
Decatur	Morgan	01-103-0011	Wallace Ctr.Hwy 31, Decatur	34.530717	-86.967536	M	SPM	Population Exposure/ Decatur MSA	4/1/2009	active	B	C	N	Collocated Non-FEM Continuous
Phenix City	Russell	01-113-0001	St. Patrick's Church, Phenix City	32.472316	-85.005028	N	S	Highest Concentration/ Columbus, GA-AL MSA	1/1/1999	active	L	3	Y	FRM
Phenix City	Russell	01-113-0001	St. Patrick's Church, Phenix City	32.472316	-85.005028	N	QA	Highest Concentration/ Columbus, GA-AL MSA	5/17/2004	active	L	3	Y	Collocated FRM
Phenix City	Russell	01-113-0001	St. Patrick's Church, Phenix City	32.472316	-85.005028	N	SPM	Highest Concentration/ Columbus, GA-AL MSA	1/25/2010	active	T	C	N	Collocated Non-FEM Continuous
Pelham	Shelby	01-117-0006	Pelham High School	33.31278	-86.82111	U	S	Highest Concentration/ Birmingham MSA	1/1/1999	6/1/2015	L	3	Y	
Ward, Sumter County	Sumter	01-119-0003	NNE of Ward Post office, Sumter Co., Alabama	32.362606	-88.277992	R	SPM	Background/General/ not in MSA	3/1/2013	active	B	C	N	Continuous For Background
Childersburg	Talladega	01-121-0002	300 1st Street Southeast, Childersburg, AL	33.27947	-86.349438	N	S	Highest Concentration/ Talladega µSA	1/1/1999	active	L	3	Y	FRM
VA, Tuscaloosa	Tuscaloosa	01-125-0004	3701 Loop Road East	33.189931	-87.484189	N	S	Population Exposure/ Tuscaloosa MSA	10/1/2002	active	L	3	Y	FRM
VA, Tuscaloosa	Tuscaloosa	01-125-0004	3701 Loop Road East	33.189931	-87.484189	N	SPM	Population Exposure/ Tuscaloosa MSA	1/1/2014	active	B	3	N	Collocated Non-FEM Continuous

OZONE

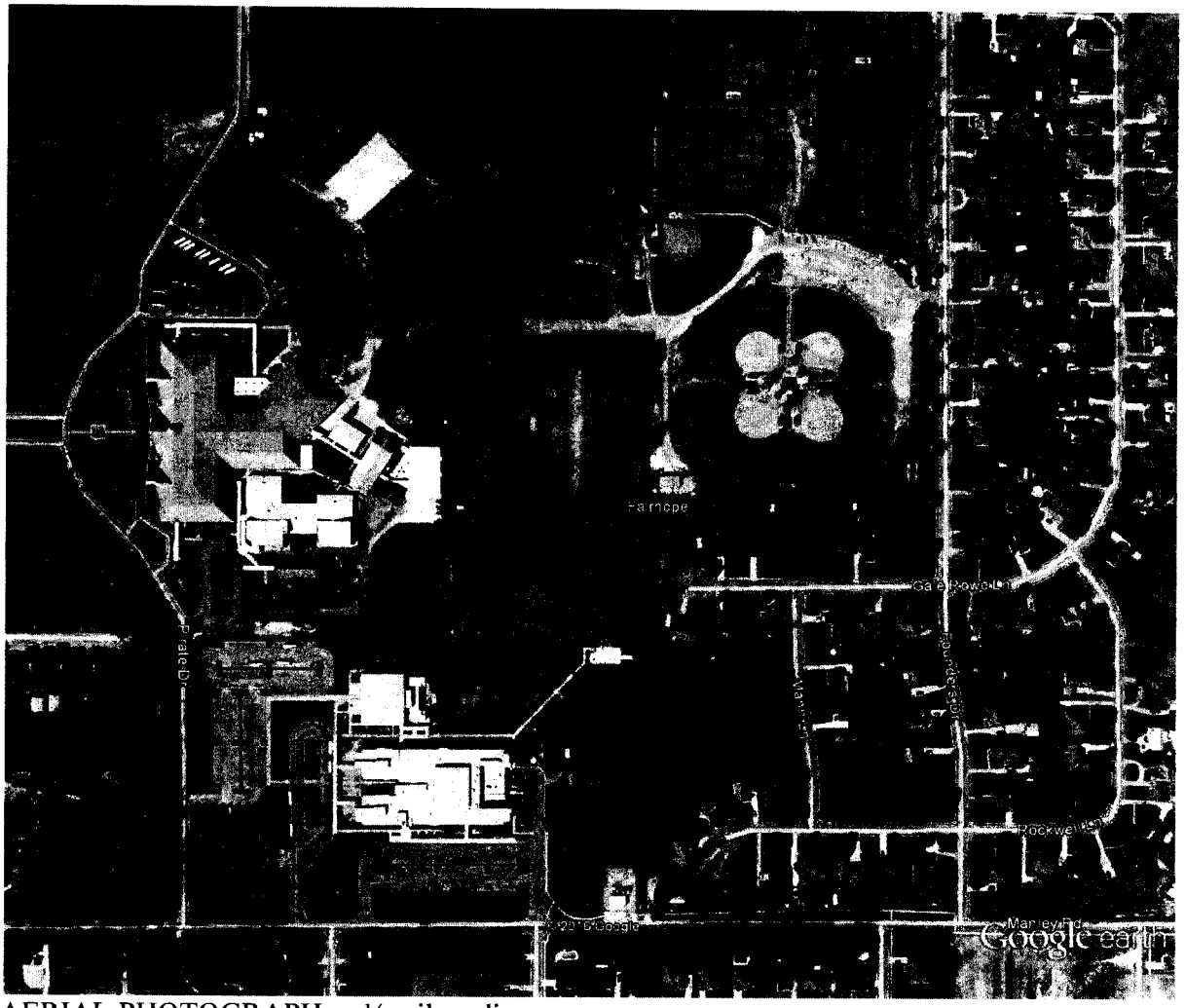
Site common name	County	AQS Site ID	Address	Latitude	Longitude	SCALE	TYPE	Monitoring objective / CBSA	Date Began	Date Ended	METHOD	SCHEDULE	NAAQS	Comment
Fairhope	Baldwin	01-003-0010	Fairhope High School, Fairhope, AL	30.497478	-87.880258	N	SPM	Population Exposure/ Mobile MSA	3/1/2000	active	U	C	Y	
Muscle Shoals	Colbert	01-033-1002	Wilson Dam Rd And 2nd St.	34.762619	-87.638097	N	SPM	Population Exposure/ Decatur MSA	3/1/2003	active	U	C	Y	
DBT	Elmore	01-051-0001	Dewberry Trail, Wetumpka	32.492533	-86.134986	U	S	Highest Concentration/ Montgomery MSA	3/1/1990	active	U	C	Y	
Southside	Etowah	01-055-0011	1450 Parker Anderson Lane, Southside, Al	33.9039	-86.0539	N	S	Max Concentration/ Gadsden MSA	4/26/2002	active	U	C	Y	
Dothan	Houston	01-069-0004	161 Buford Lane	31.188933	-85.423094	N	S	Population Exposure/ Dothan MSA	3/14/2005	active	U	C	Y	
Chickasaw	Mobile	01-097-0003	Iroquois And Azalea Chickasaw	30.770181	-88.087761	N	S	Population Exposure/ Mobile MSA	3/2/1982	active	U	C	Y	
Bay Road	Mobile	01-097-2005	Bay Rd. ,Mobile AL	30.4747	-88.1411	U	S	Population Exposure/ Mobile MSA	3/1/1999	active	U	C	Y	
MOMS, ADEM	Montgomery	01-101-1002	1350 Coliseum Blvd, Montgomery, AL	32.412811	-86.263394	N	S	Population Exposure/ Montgomery MSA	6/2/1993	active	U	C	Y	
Decatur	Morgan	01-103-0011	Wallace Development Center	34.530717	-86.967536	U	S	General/Background/ Decatur MSA	4/1/2000	active	U	C	Y	
Ladonia, Phenix City	Russell	01-113-0002	9 Woodland Drive (School) , Ladonia, Al	32.46735	-85.083447	U	SPM	Population Exposure/ Columbus, GA-AL MSA	3/1/2003	active	U	C	Y	
Helena	Shelby	01-117-0004	Helena, Bearden Farm	33.3169	-86.825	U	S	Population Exposure/ Birmingham MSA	1/1/1983	active	U	C	Y	
Ward, Sumter Co.	Sumter	01-119-0003	NNE of Ward Post Office, Sumter Co., Alabama	32.362606	-88.277992	R	SPM	General/Background/ not in MSA	3/1/2013	active	U	C	Y	
Duncanville, Tuscaloosa	Tuscaloosa	01-125-0010	11690 Southfork Dr. Duncanville, Al	33.089772	-87.459733	U	S	Population Exposure/ Tuscaloosa MSA	2/1/2001	active	U	C	Y	
Sand Mountain	Dekalb	01-049-9991	Sand Mountain Agricultural Exper. Station Crossville, AL	34.2888	-85.9698	R	CAS	Highest Concentration/ Fort Payne µSA	1/1/2011	active	U	C	N	operated by EPA

SO_2

Site common name	County	AQS Site ID	Address	Latitude	Longitude	SCALE	TYPE	Monitoring objective / CBSA	Date Began	Date Ended	METHOD	SCHEDULE	NAAQS	Comment
Chickasaw	Mobile	01-097-0003	Iroquois And Azalea Chickasaw	30.76972	-88.0875	N	S	Population Exposure/ Mobile MSA	1/1/2013	active	P	C	Y	
Duncanville, Tuscaloosa	Tuscaloosa	01-125-0010	11690 Southfork Dr. Duncanville, Al	33.08953	-87.45972	U	S	Population Exposure/ Tuscaloosa MSA	1/1/2013	active	P	C	Y	

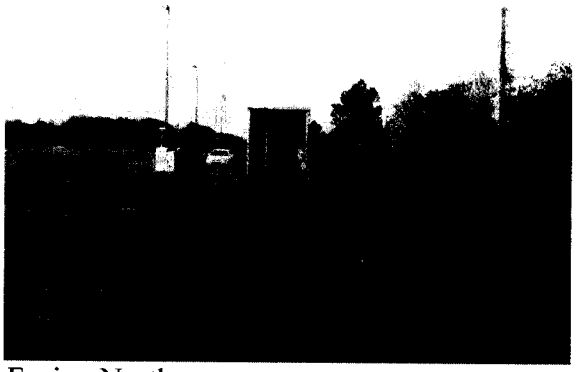
Fairhope
Fairhope High School
1 Pirate Drive
Fairhope, Alabama 36532
Baldwin County

AQS Site ID: 01-003-0010
Latitude: 30.497478
Longitude: -87.880258

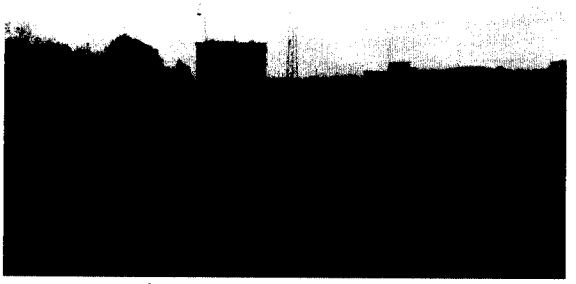


AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	N	S	Population Exposure / Daphne-Fairhope, AL	L	3	Y	1/1/2000	active	
Ozone	N	SPM	Population Exposure / Mobile MSA	U	C	Y	3/1/2000	active	

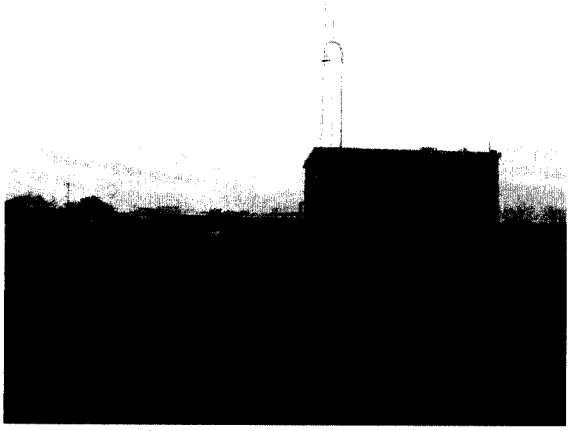


Facing North



Facing South

Facing East



Facing West

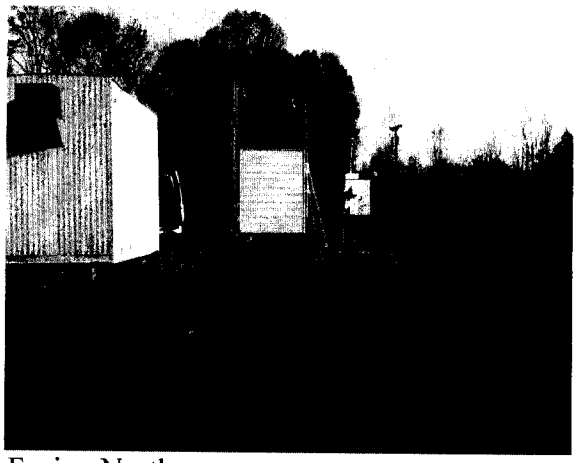
Monitor	Height of inlet	Distance of inlet from supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
R&P 2.5	2.1m	N/A	19.2m	17.4m	68m to Gail Rowe Ln	Grass	N/A	N/A
UV Ozone	4.3m	1.1m	14.6m	12.8m	68m to Gail Rowe Ln	Grass	Teflon	Stainless steel

Muscle Shoals
2nd Street and Wilson Dam Road
Muscle Shoals, Alabama 35661
Colbert County

AQS Site ID: 01-003-1002
Latitude: 34.762619
Longitude: -87.638097

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	N	S	Highest Concentration / Florence MSA	L	3	Y	1/1/1999	active	
Ozone	N	SPM	Population Exposure / Decatur MSA	U	C	Y	3/1/2003	active	



Facing North

Facing South

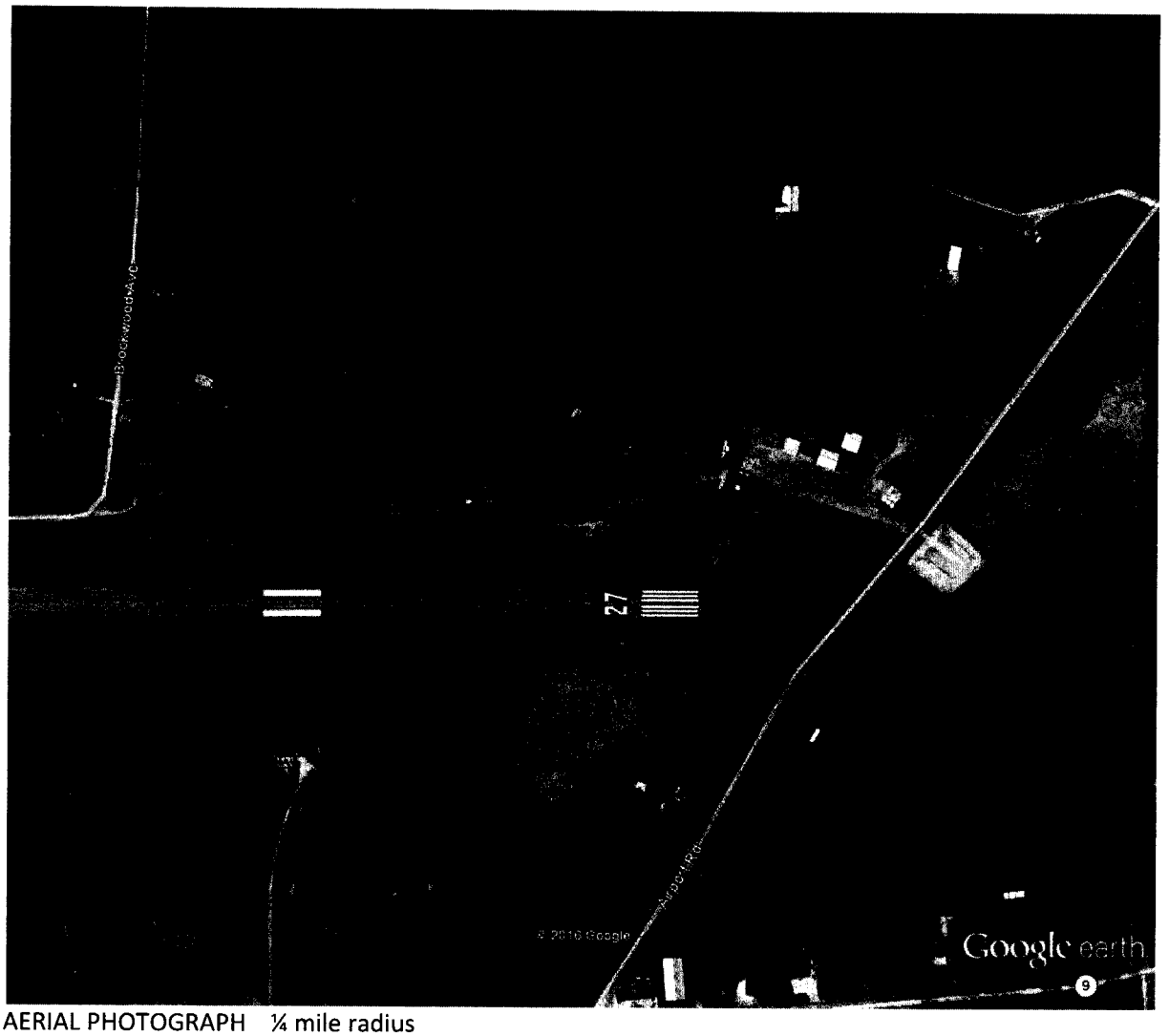
Facing East

Facing West

Monitor	Height of inlet	Distance of inlet from supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	3.7m	1.1m	8m	7.6m	>400m	Grass	Teflon	Stainless steel
R&P 2.5	2.1m	N/A	8m	7.6m	>400m	Grass	N/A	N/A

Ashland
Ashland Airport
Ashland, Alabama 36251
Clay County

AQS Site ID: 01-027-0001
Latitude: 33.284928
Longitude: -85.803608



AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	R	S	Highest Concentration / not in CBSA	L	3	Y	1/1/1999	active	


Facing North


Facing South

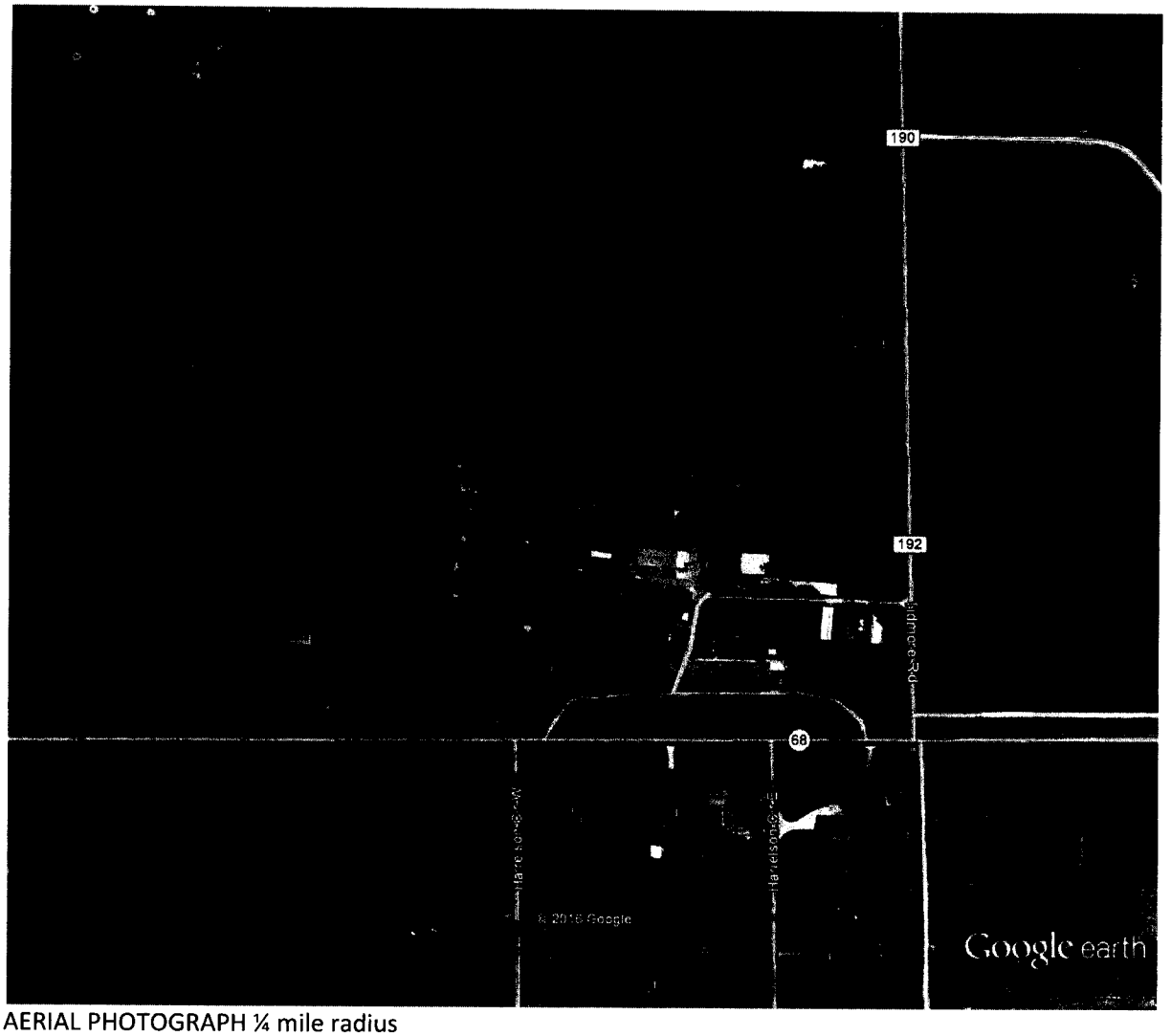

Facing East


Facing West

Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway (nearest pavement)	Type of ground cover around site	Probe material
R&P 2.5	N/A	2.1m	45m	37m	>200m	Grass	N/A

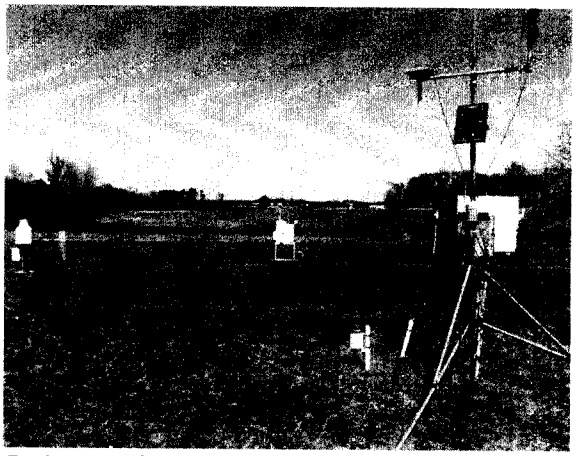
Crossville
13112 Highway 68
Crossville, Alabama 35962
DeKalb County

AQS Site ID: 01-049-1003
Latitude: 34.288567
Longitude: -85.969858



AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	R	S	General / background	L	3	Y	1/1/1999	active	



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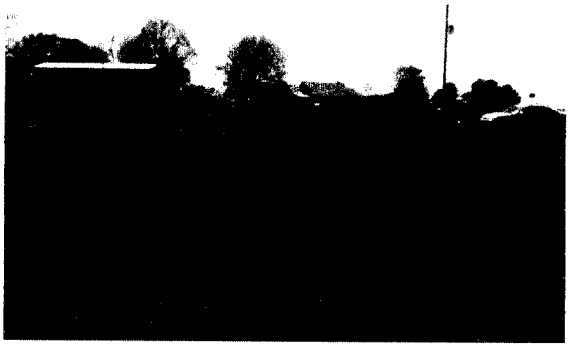


Facing South

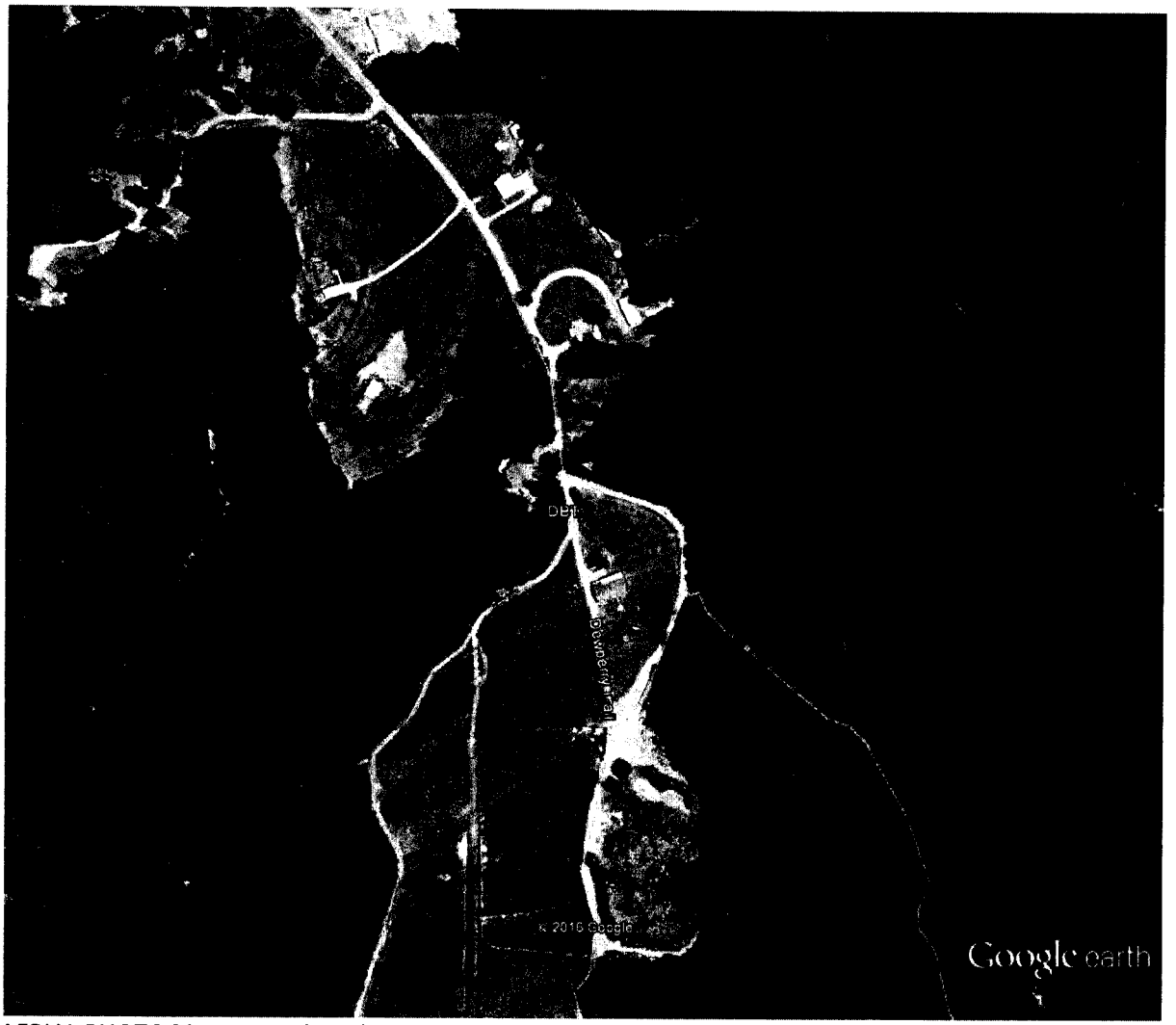
Facing East

Facing West

Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material
R&P 2.5	N/A	2.1m	28m	26m	>100m	Grass	N/A

DBT, Wetumpka
Dewberry Trail
Wetumpka, Alabama 36093
Elmore County

AQS Site ID: 01-051-0001
Latitude: 32.492533
Longitude: -86.134986



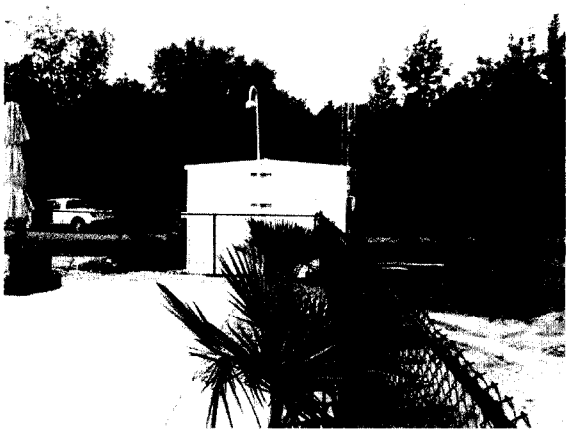
AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Ozone	U	S	Highest Concentration / Montgomery MSA	U	C	Y	3/1/1990	active	

Facing North

Facing South

Facing East



Facing West

Monitor	Height of inlet	Distance of inlet above supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	4m	1.2m	12.8m	11.9m	28m	Grass	Teflon	Stainless Steel

Comment: ADEM has been asked to move this monitor. ADEM will be looking for a new site in the summer of 2016.

Gadsden C College
1001 Wallace Drive
Gadsden, Alabama 35902
Etowah County

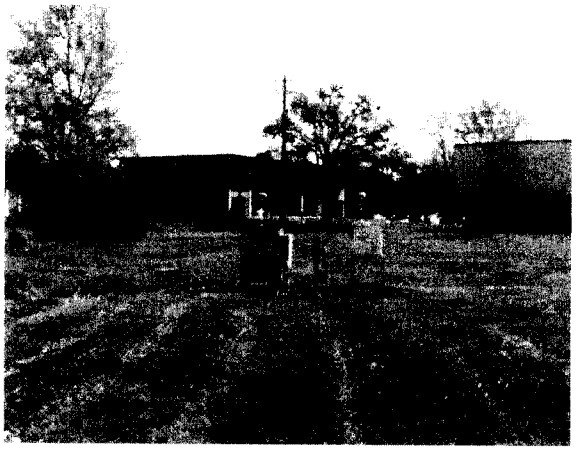
AQS Site ID: 01-055-0010
Latitude: 33.991494
Longitude: -85.992647

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	U	S	Population Exposure / Gadsden MSA	L	3	Y	1/1/2000	active	
PM 2.5	U	S	Population Exposure / Gadsden MSA	B	C	N	3/1/2014	active	Collocated Non-FEM Continuous

Facing North

Facing South



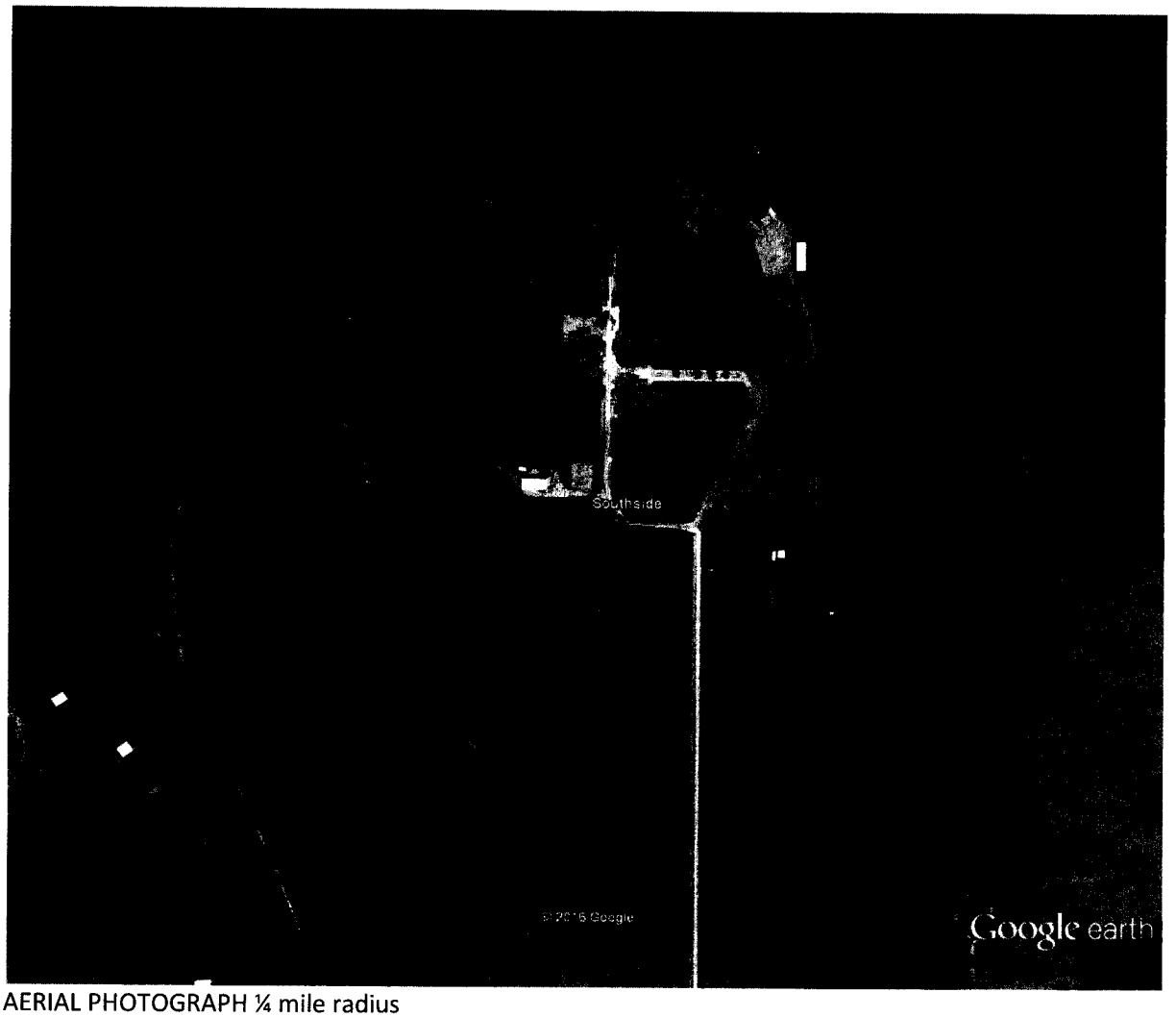
Facing East

Facing West

Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material
BAM 2.5	2.1m	2.2m	18m	17m	80m	Grass	N/A
R&P 2.5	2.1m	2.1m	20m	19m	78m	Grass	N/A

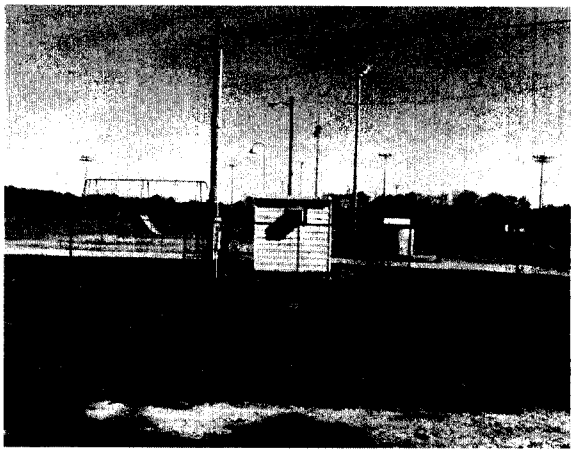
Southside
1450 Parker Anderson Lane
Southside, Alabama 35907
Etowah County

AQS Site ID: 01-055-0011
Latitude: 33.9039
Longitude: -86.0539



AERIAL PHOTOGRAPH ¼ mile radius

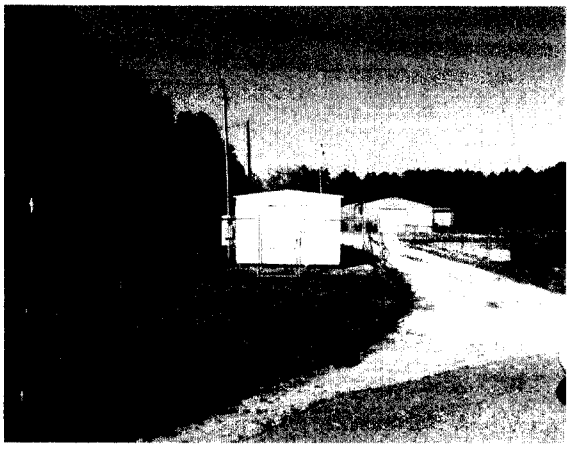
Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Ozone	N	S	Highest Concentration / Gadsden MSA	U	C	Y	4/26/2002	active	



Facing North

Facing South

Facing East

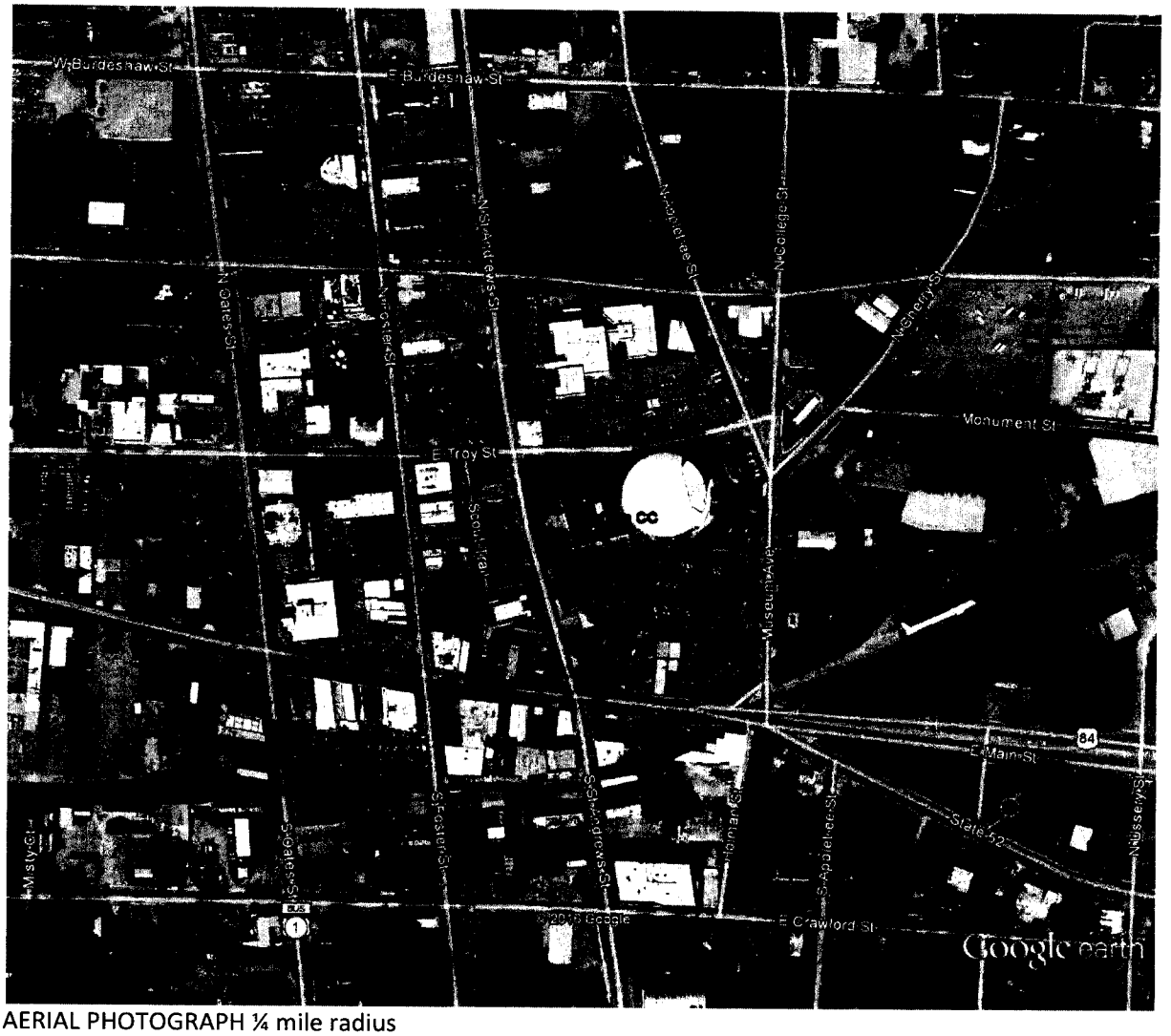


Facing West

Monitor	Height of inlet	Distance of inlet above supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	4.4m	1.8m	18m	16m	81m	Grass and gravel	Teflon	Stainless Steel

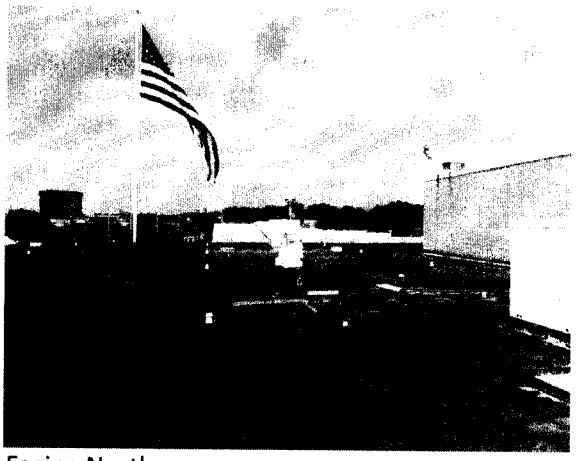
Dothan Civic Center
126 North St. Andrews Street
Dothan, Alabama 36303
Houston County

AQS Site ID: 01-069-0003
Latitude: 31.224783
Longitude: -85.390789

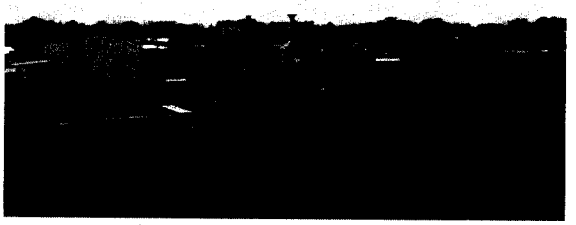


AERIAL PHOTOGRAPH ¼ mile radius

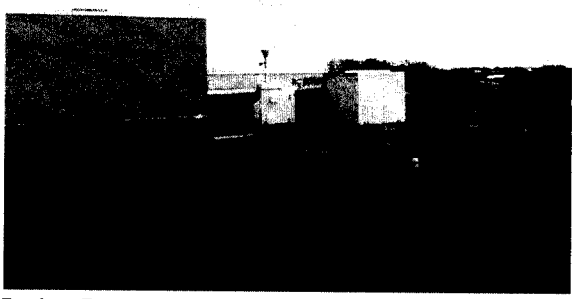
Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	N	S	Population Exposure / Dothan MSA	L	3	Y	1/7/2005	active	



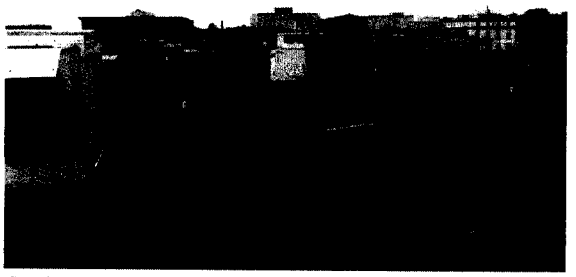
Facing North



Facing South



Facing East

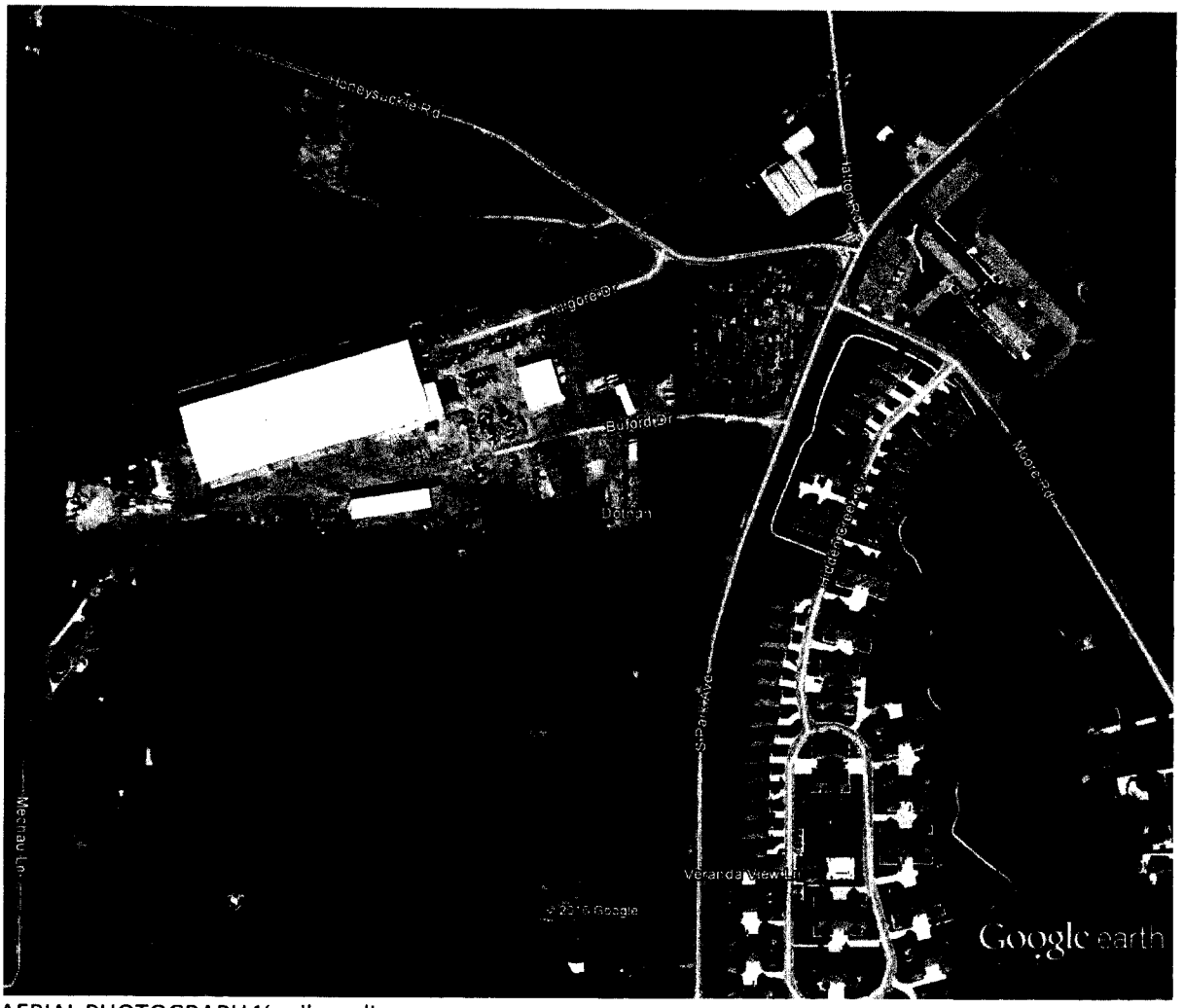


Facing West

Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material
R&P 2.5	N/A	13m	>40m	>40m	45m	Cement tile roof	N/A

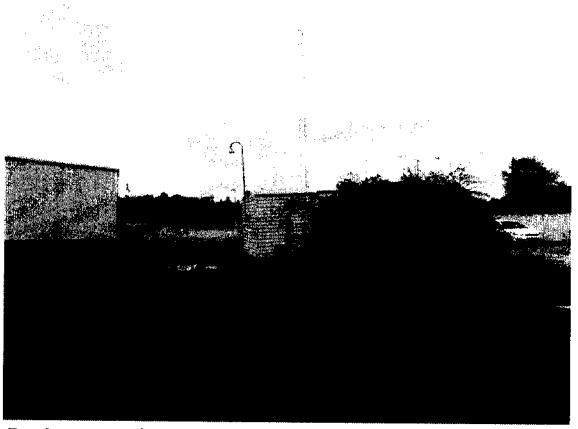
Dothan
161 Buford Lane
Dothan, Alabama 36301
Houston County

AQS Site ID: 01-069-0004
Latitude: 31.188933
Longitude: -85.423094

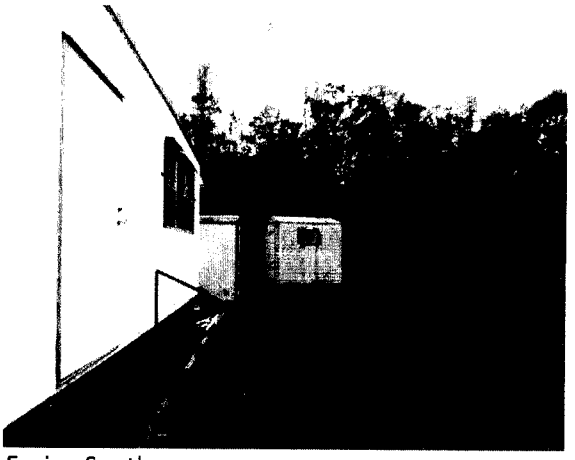


AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Ozone	N	S	Population Exposure / Dothan MSA	U	C	Y	3/14/2005	active	



Facing North



Facing South

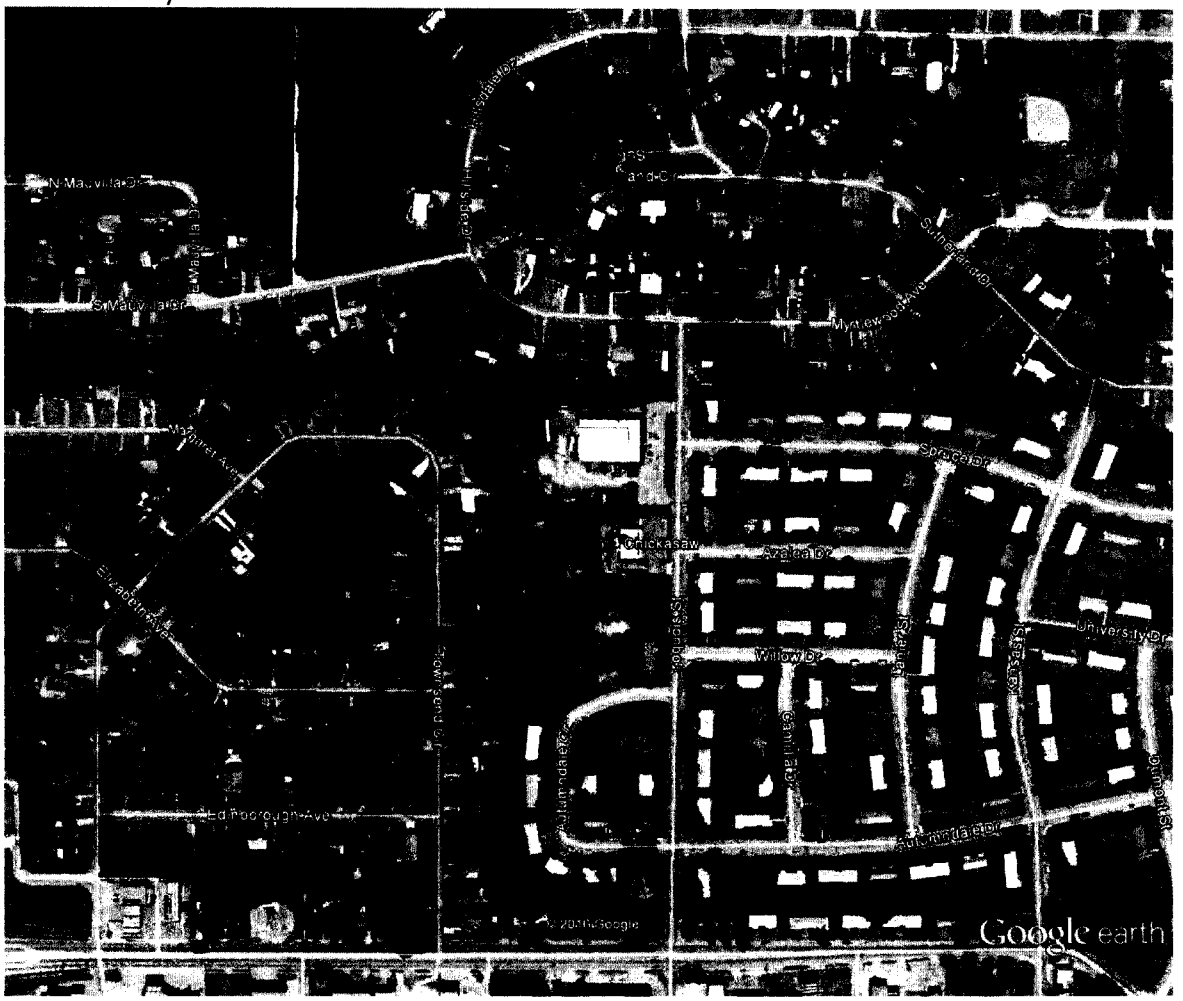
Facing East

Facing West

Monitor	Height of inlet	Distance of inlet above supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	4.3m	1.7m	41m	35m	100m to S Park Ave	Grass and pavement	Teflon	Stainless Steel

Chickasaw
Iroquois and Azalea
Chickasaw, Alabama 36611
Mobile County

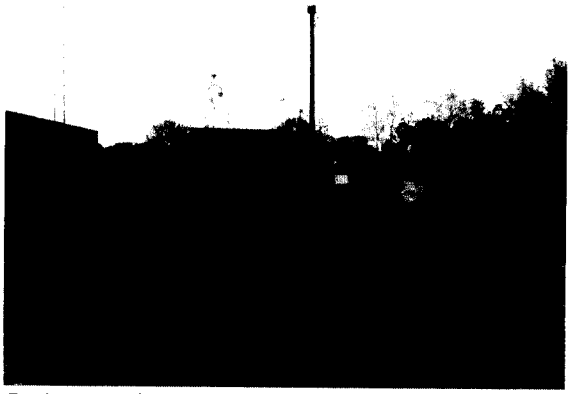
AQS Site ID: 01-097-0003
Latitude: 30.770181
Longitude: -88.087761



AERIAL PHOTOGRAPH ¼ mile radius

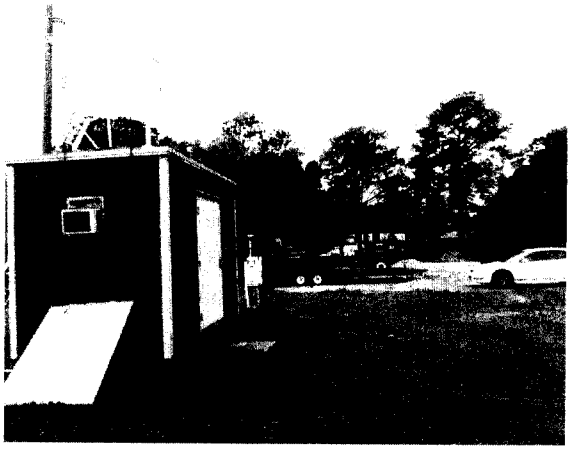
Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	N	S	Population Exposure / Mobile MSA	L	3	Y	7/19/2002	active	
PM 2.5	N	S	Population Exposure / Mobile MSA	B	C	N	3/1/2011	active	Collocated Non-FEM Continuous
Ozone	N	S	Population Exposure / Mobile MSA	U	C	Y	3/2/1982	active	
SO_2	N	S	Population Exposure / Mobile MSA	P	C	Y	1/1/2013	active	

Facing North



Facing South

Facing East

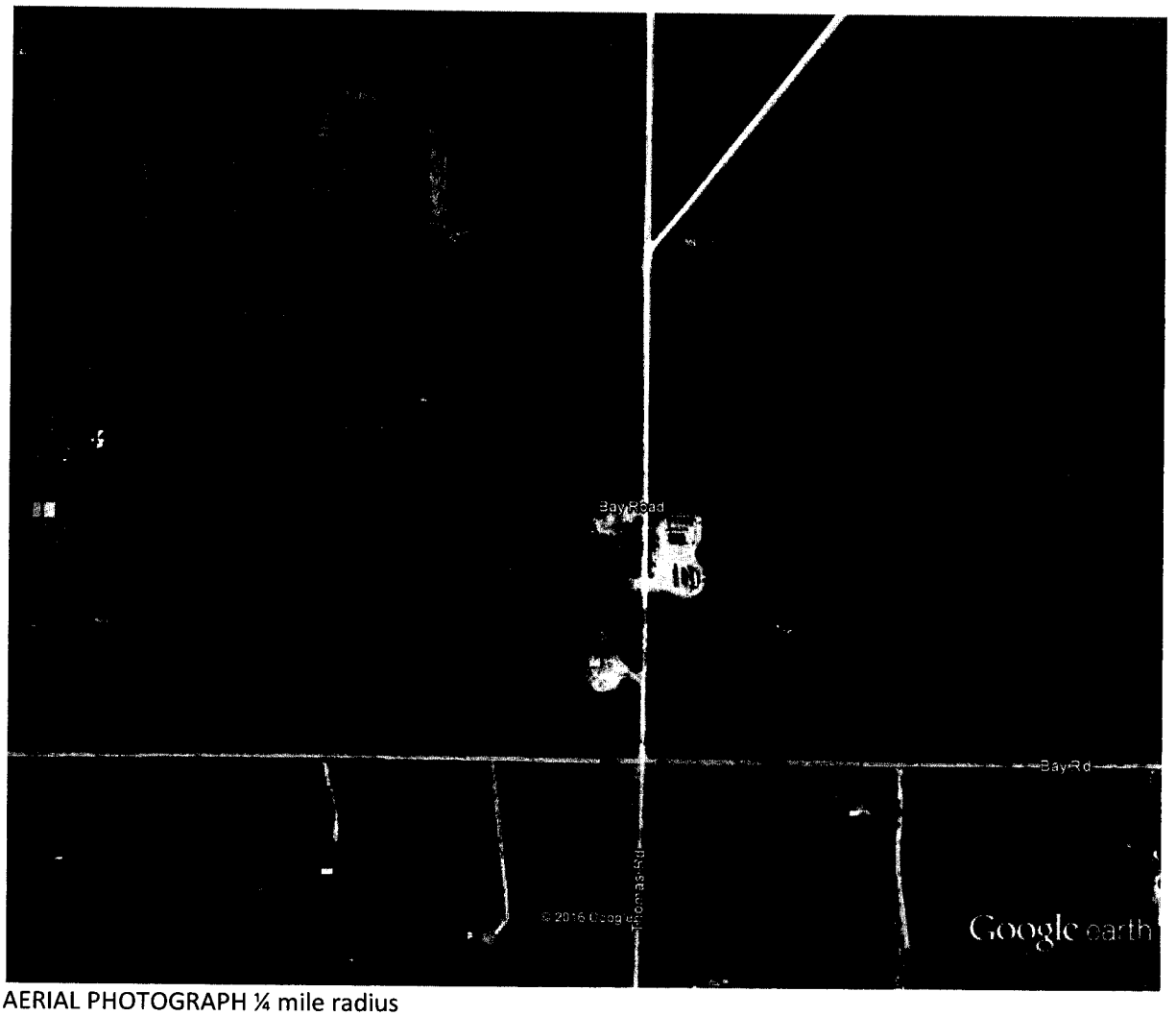


Facing West

Monitor	Height of inlet	Distance of inlet from supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
BAM 2.5	5.2m	2.1m	20m	16.5m	58m	Grass and pavement	N/A	N/A
R&P 2.5	2.1m	N/A	11m	7.3m	58m	Grass and pavement	N/A	N/A
UV Ozone	4.57m	1.65m	16.5m	12.8m	58m	Grass and pavement	Teflon	Stainless steel
SO2	4m	1m	18.2m	14.6m	58m	Grass and pavement	Teflon	Teflon

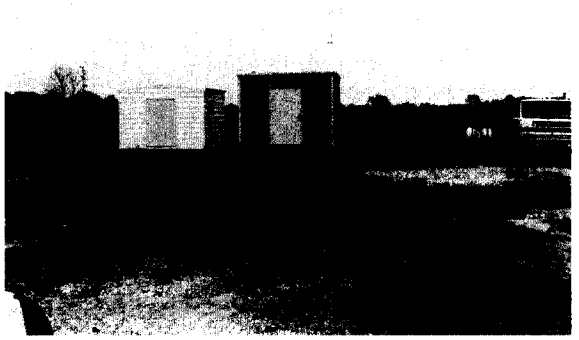
Bay Road
Bay Road
Mobile, Alabama 36582
Mobile County

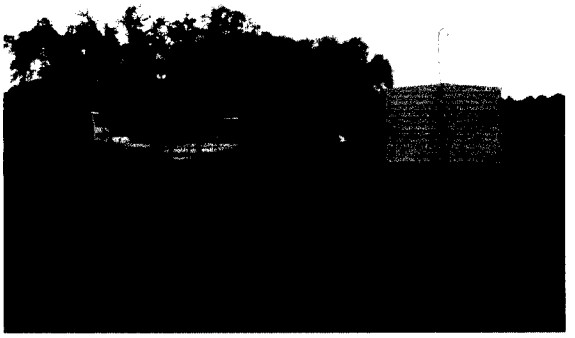
AQS Site ID: 01-097-2005
Latitude: 30.4747
Longitude: -88.1411

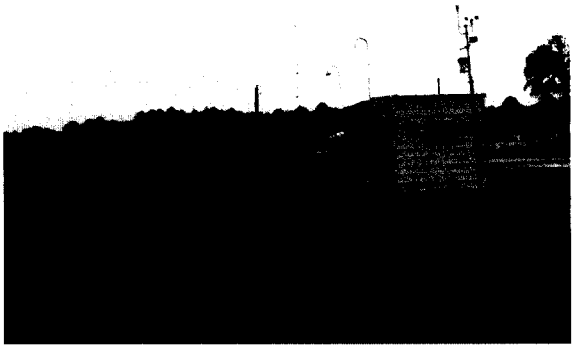


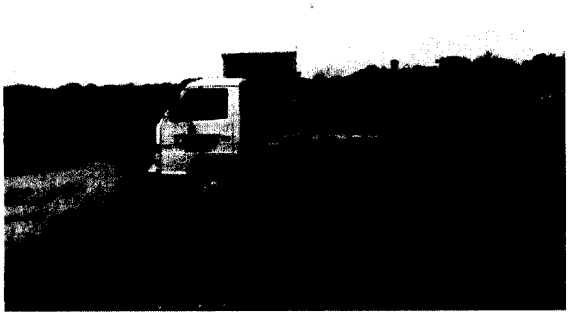
AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Ozone	U	S	Population Exposure / Mobile MSA	U	C	Y	3/1/1999	active	


Facing North


Facing South

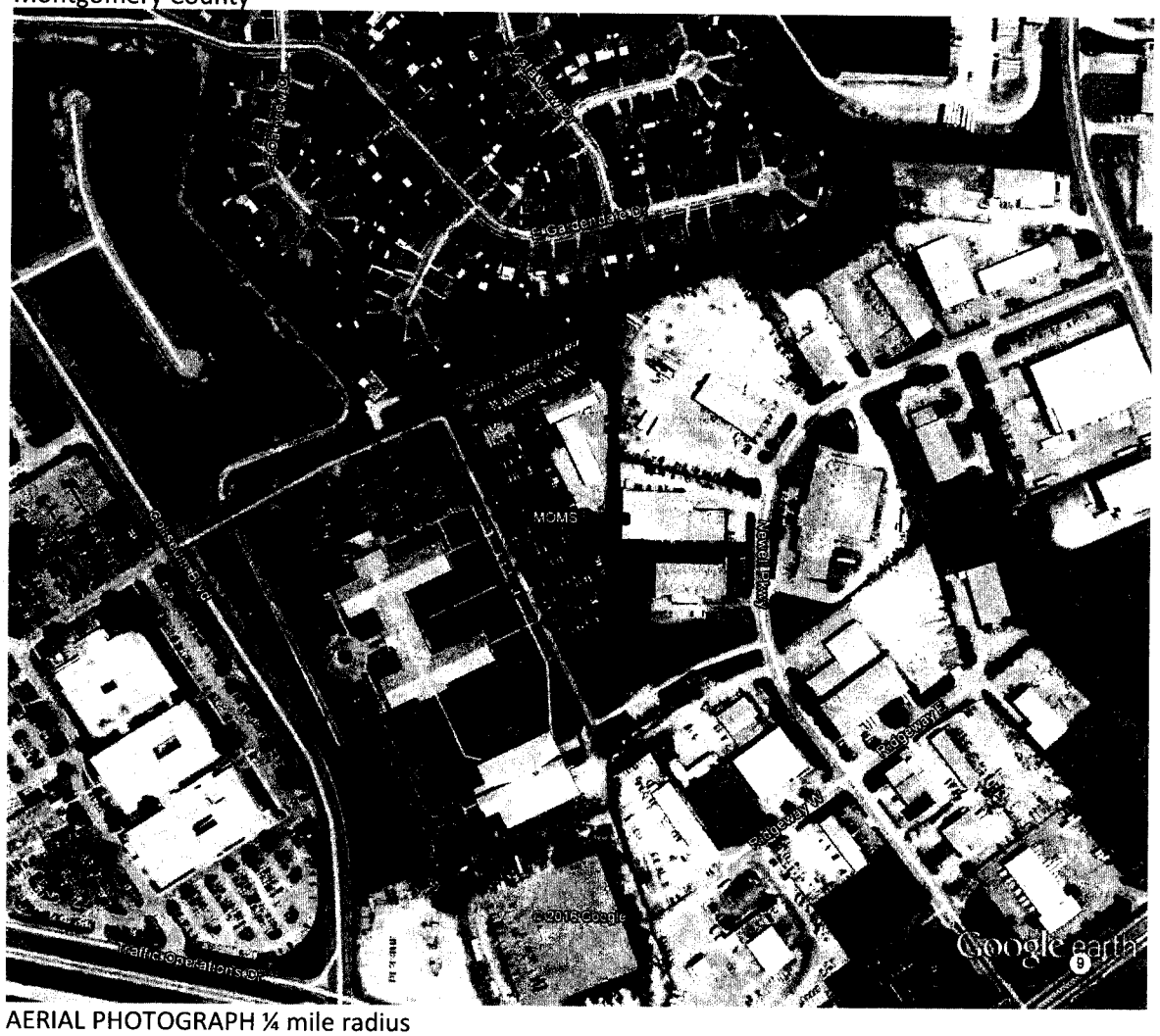

Facing East


Facing West

Monitor	Height of inlet	Distance of inlet above supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	4.3m	1.1m	44m	38m	30m to unnamed road and 207m to Bay Rd	Grass and gravel	Teflon	Stainless Steel

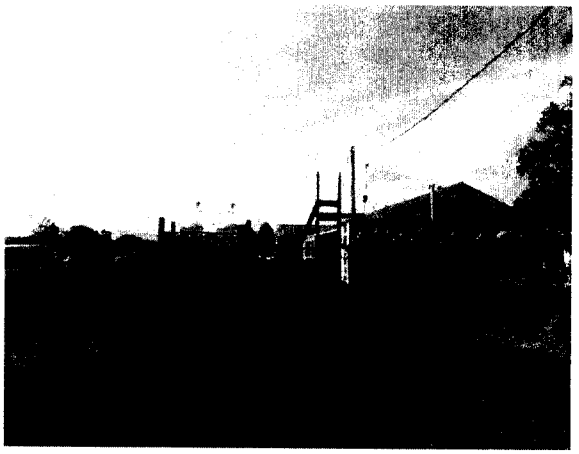
MOMS, ADEM
1350 Coliseum Boulevard
Montgomery, Alabama 36610
Montgomery County

AQS Site ID: 01-101-1002
Latitude: 32.412811
Longitude: -86.263394

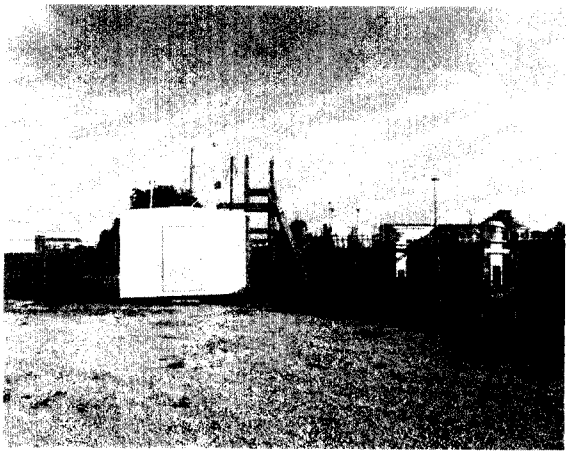


AERIAL PHOTOGRAPH ¼ mile radius

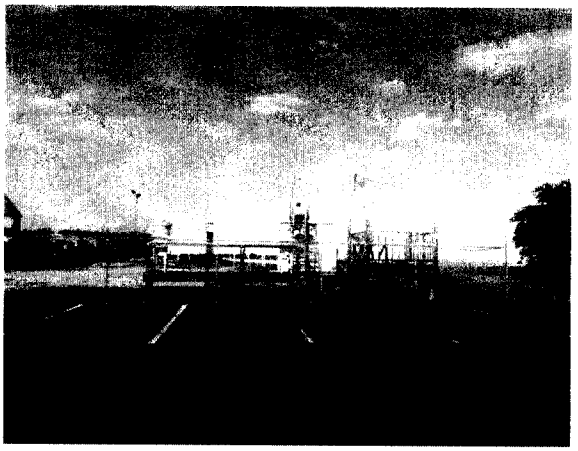
Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 10	N	S	Population Exposure / Montgomery MSA	H	6	Y	6/1/1993	active	
PM 10	N	QA	Population Exposure / Montgomery MSA	H	6	Y	1/1/2013	active	Collocated
PM 2.5	N	S	Population Exposure / Montgomery MSA	L	3	Y	1/16/2009	active	
PM 2.5	N	QA	Population Exposure / Montgomery MSA	L	3	Y	1/16/2009	active	Collocated
PM 2.5	N	S	Population Exposure / Montgomery, AL	B	C	N	4/1/2009	active	Collocated Non-FEM Continuous
Ozone	N	S	Population Exposure / Montgomery MSA	U	C	Y	6/2/1993	active	



Facing North



Facing South



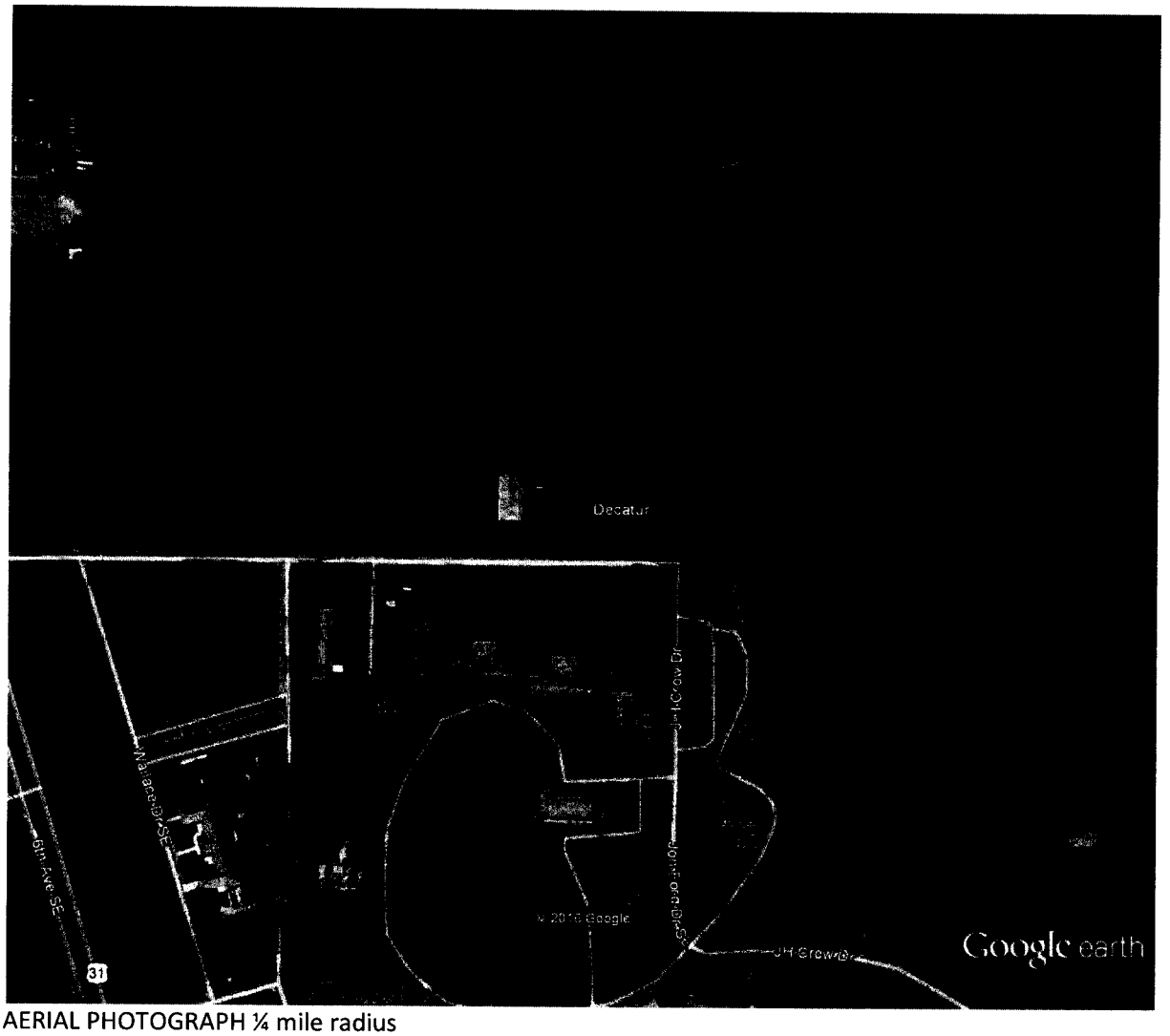
Facing East

Facing West

Monitor	Height of inlet	Distance of inlet from supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
Hi-Vol SSI PM 10	2.3m	N/A	15m	15m	>100m	Grass, gravel and pavement	N/A	N/A
Hi-Vol SSI PM 10	2.3m	N/A	17.3m	17.3m	>100m	Grass, gravel and pavement	N/A	N/A
R&P 2.5	3.26m	N/A	14m	14m	>100m	Grass, gravel and pavement	N/A	N/A
R&P 2.5	3.26m	N/A	14m	14m	>100m	Grass, gravel and pavement	N/A	N/A
BAM 2.5	4.86m	2m	10.7m	10.7m	>100m	Grass, gravel and pavement	N/A	N/A
UV Ozone	3.75m	1.1m	8m	8m	>100m	Grass, gravel and pavement	Teflon	Stainless steel

Decatur
Wallace Development Center, Highway 31
Decatur, Alabama 35603
Morgan County

AQS Site ID: 01-103-0011
Latitude: 34.530717
Longitude: -86.967536

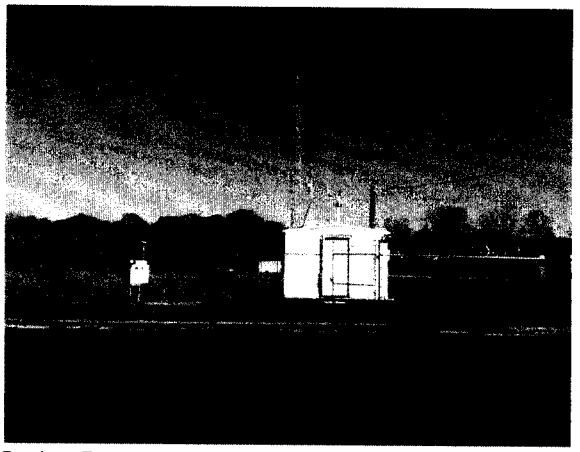


AERIAL PHOTOGRAPH ¼ mile radius

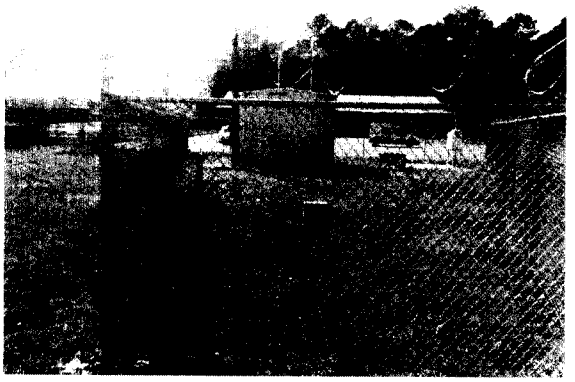
Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	M	S	Population Exposure / Decatur MSA	L	3	Y	8/7/2001	active	
PM 2.5	M	S	Population Exposure / Decatur MSA	B	C	N	4/1/2009	active	Collocated Non-FEM Continuous
Ozone	U	S	General / Background / Decatur MSA	U	C	Y	4/1/2000	active	

Facing North

Facing South



Facing East



Facing West

Monitor	Height of inlet	Distance of inlet from supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	3.9m	1.2m	>20m	>20m	>400m	Grass	Teflon	Stainless steel
BAM 2.5	4.9m	2.4m	>20m	>20m	>400m	Grass	N/A	N/A
R&P 2.5	2.1m	N/A	>20m	>20m	>400m	Grass	N/A	N/A

Troy
Henderson Road
Troy, Alabama
Pike County

AQS Site ID: 01-109-0003
Latitude: 31.790560
Longitude: -85.979170

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Lead	N	S	Highest Concentration / Troy, AL	S, G	6	Y	1/1/2009	active	
Lead	N	Q A	Highest Concentration / Troy, AL	S, G	6	Y	1/1/2009	active	collocated

Facing North

Facing South

Facing East

Facing West

Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway (nearest pavement)	Type of ground cover around site	Probe material
TSP – HV	2.1m	2m	12.8m	11.9m	13.7m	Grass	N/A
TSP - HV	2.1m	2.1m	9.1m	10m	15.5m	Grass	N/A

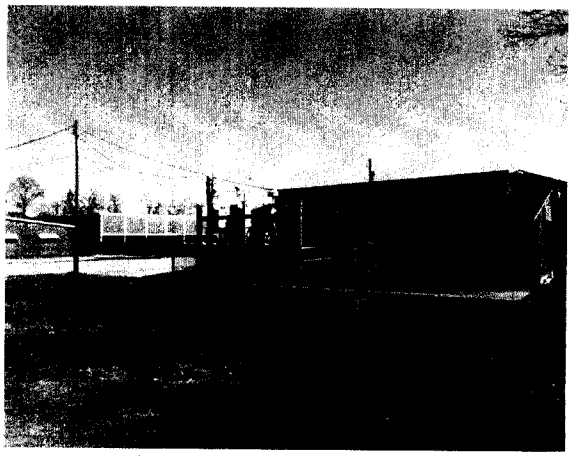
Phenix City
1319 9th Avenue
Phenix City, Alabama 36867
Russell County

AQS Site ID: 01-113-0001
Latitude: 32.472136
Longitude: -85.005028

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	N	S	Highest Conc./ Columbus, GA-AL MSA	L	3	Y	1/1/1999	active	
PM 2.5	N	QA	Highest Conc./ Columbus, GA-AL MSA	L	3	Y	5/17/2004	active	Collocated
PM 2.5	N	S	Highest Conc./ Columbus, GA-AL MSA	B	C	N	3/28/2016	active	FEM Continuous (in 2-year eval.)
CSN Supplemental			Highest Conc./ Columbus, GA-AL MSA	L			4/4/2005		


Facing North


Facing South


Facing East


Facing West

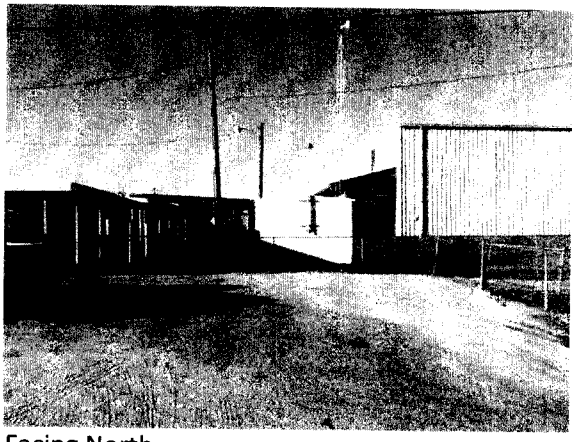
Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material
R&P 2.5	1m	3.81m	14.6m	11m	18.3m	Grass and pavement	N/A
R&P 2.5	1m	3.81m	15.5m	12m	17.3m	Grass and pavement	N/A
BAM 1022	1 m	3.7m	13.7m	9m	17.3m	Grass and pavement	N/A
SASS	1.8m	3.7m	13.7m	9m	17.3m	Grass and pavement	N/A
URG	1.8m	3.7m	15.5m	12m	15.5m	Grass and pavement	N/A

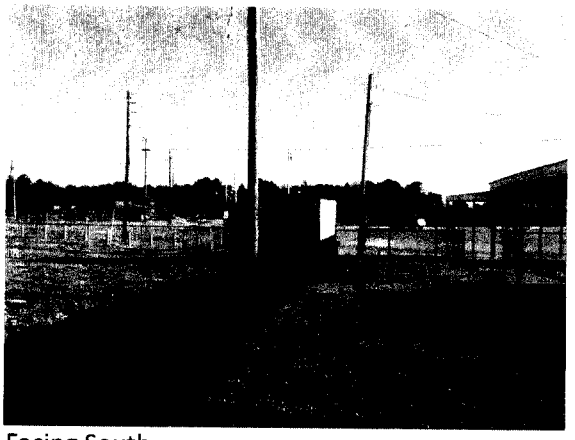
Ladonia , Phenix City
9 Woodland Drive
Ladonia, Alabama 36869
Russell County

AQS Site ID: 01-113-0002
Latitude: 32.46735
Longitude: -85.083447

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Ozone	U	SPM	Population Exposure/ Columbus, GA-AL MSA	U	C	Y	03/1/2003	active	


Facing North


Facing South

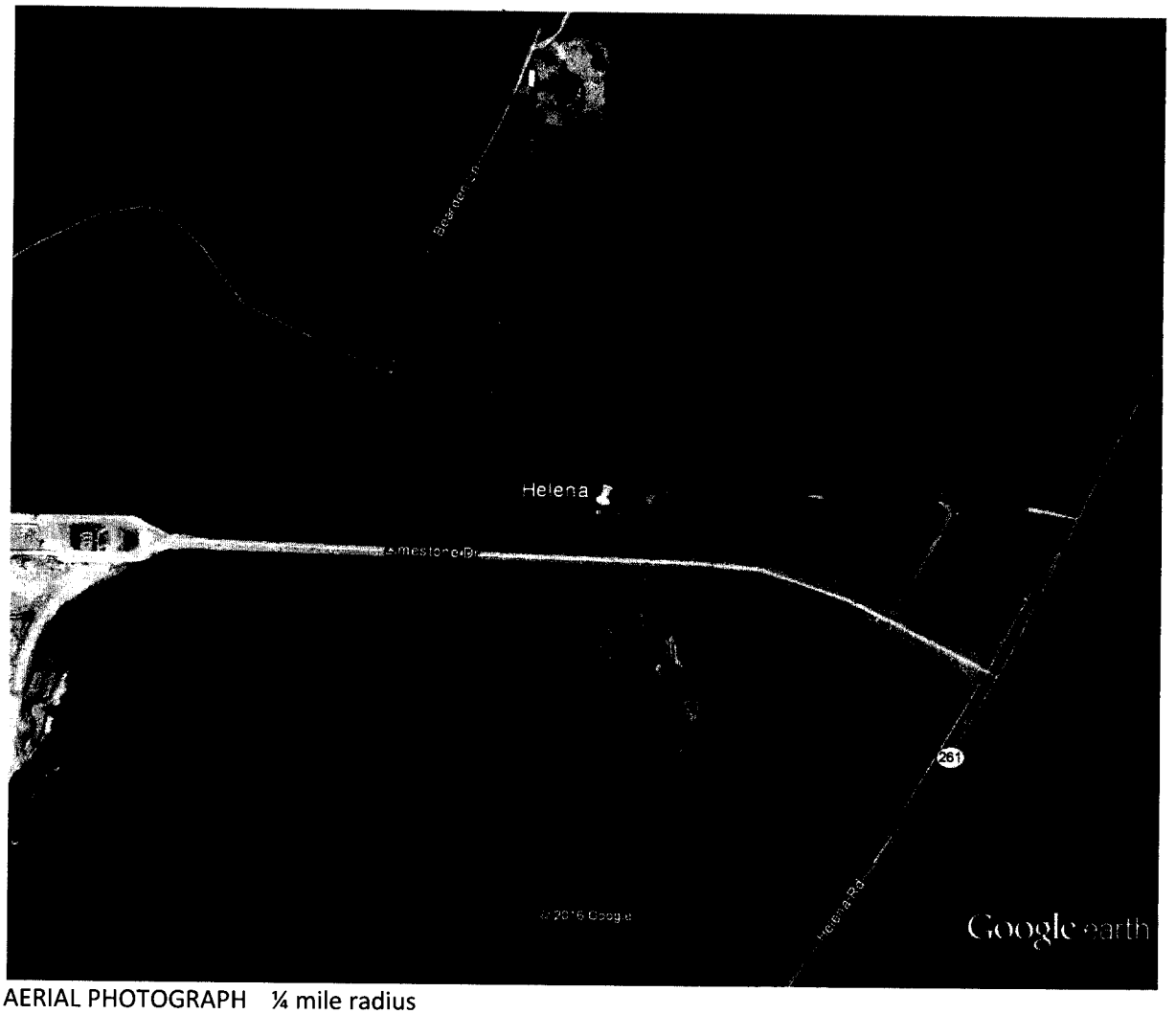

Facing East


Facing West

Monitor	Height of inlet	Distance of inlet above supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	4.3m	1.6m	>20m	>20m	100m to Woodland Drive	Grass and pavement	Teflon	Stainless Steel

Helena
Bearden Farm
Helena, Alabama
Shelby County

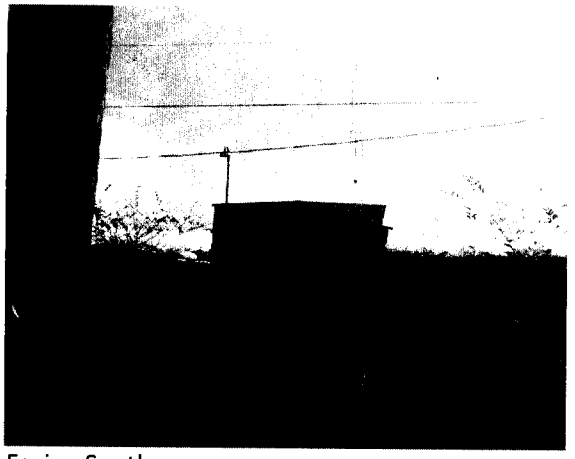
AQS Site ID: 01-117-0004
Latitude: 33.3169
Longitude: -86.825

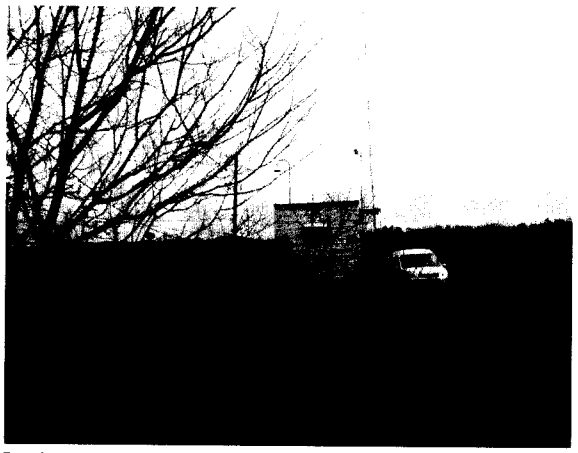


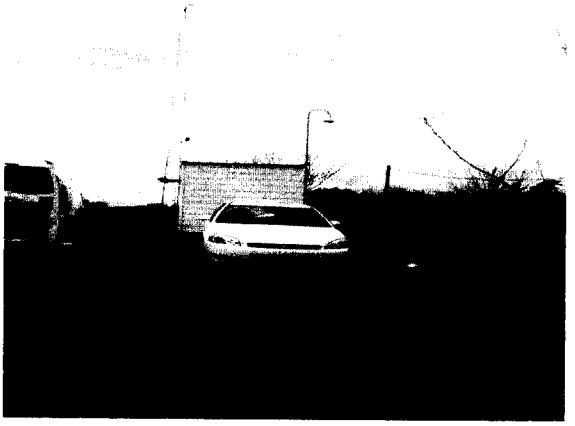
AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Ozone	U	S	Population Exposure / Birmingham MSA	U	C	Y	1/1/1983	active	


Facing North


Facing South


Facing East


Facing West

Monitor	Height of inlet	Distance of inlet from supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	4.5m	1.8m	12.5m	8.5m	>90m	Grass	Teflon	Stainless steel

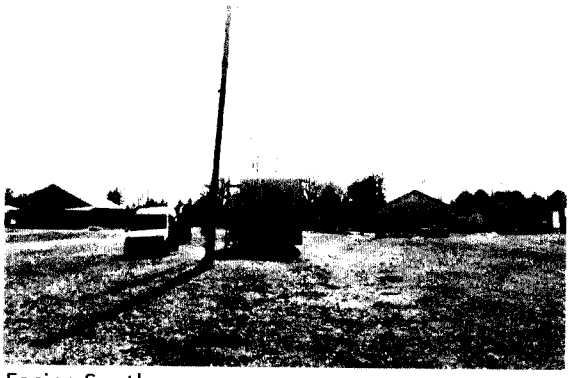
Ward, Sumter County
NNE of Ward Post Office
Ward, Alabama 36907
Sumter County

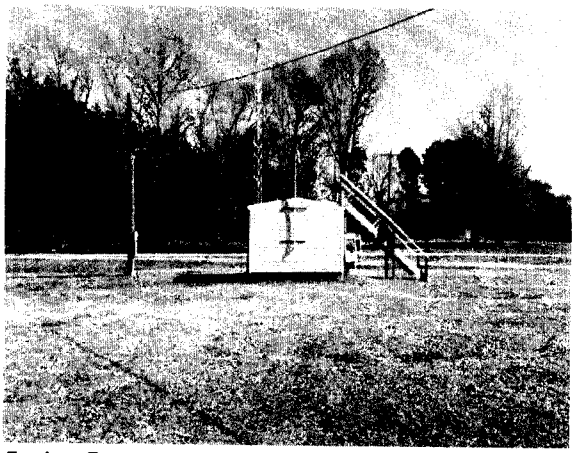
AQS Site ID: 01-119-0003
Latitude: 32.362606
Longitude: -88.277992

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	R	S	Background / General / Not in MSA	B	C	N	3/1/2013	active	Non-FEM Continuous For Background
Ozone	R	SPM	Background / General / Not in MSA	U	C	Y	3/1/2013	active	


Facing North


Facing South


Facing East


Facing West

Monitor	Height of inlet	Distance of inlet from supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
BAM 2.5	4.7m	1.3m	22m	16.5m	43m	Grass	N/A	N/A
UV Ozone	4.7m	1.3m	21m	15.5m	43m	Grass	Teflon	Stainless steel

Childersburg
300 1st Street Southeast
Childersburg, Alabama 35044
Talladega County

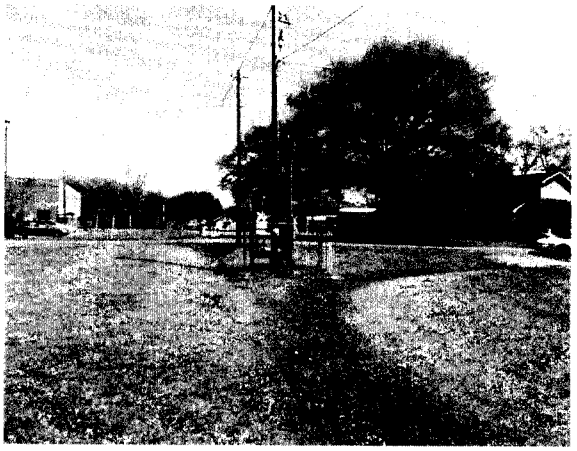
AQS Site ID: 01-121-0002
Latitude: 33.27947
Longitude: -86.349438

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	N	S	Highest Concentration / Talladega µSA	L	3	Y	1/1/1999	active	

Facing North

Facing South



Facing East

Facing West

Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material
R&P 2.5	N/A	2.8m	27m	17m	17m from 3rd Ave SE 64m from DeSoto Caverns Parkway	Grass	N/A

VA, Tuscaloosa
3701 Loop Road East
Tuscaloosa, Alabama 35404
Tuscaloosa County

AQS Site ID: 01-125-0004
Latitude: 33.189931
Longitude: -87.484189

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM 2.5	N	S	Population Exposure / Tuscaloosa MSA	L	3	Y	10/1/2002	active	
PM 2.5	N	S	Population Exposure / Tuscaloosa MSA	B	3	N	3/1/2014	active	Collocated Non-FEM Continuous

Facing North

Facing South

Facing East

Facing West

Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material
BAM 2.5	1.8m	2.26m	17m	15.5m	>40m	Grass	N/A
R&P 2.5	1.8m	2.1m	19m	17.4m	>40m	Grass	N/A

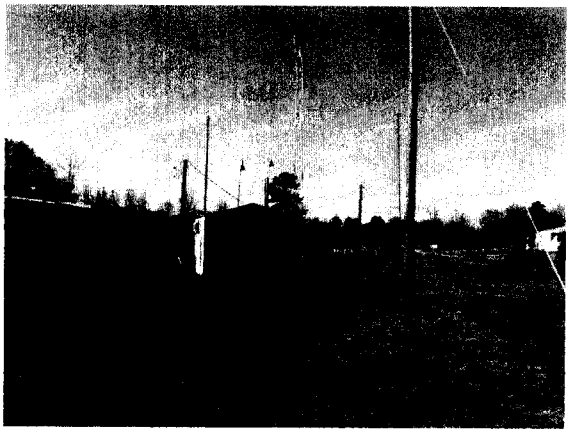
Duncanville, Tuscaloosa
11690 Southfork Drive
Duncanville, Alabama 35456
Tuscaloosa County

AQS Site ID: 01-125-0010
Latitude: 33.089772
Longitude: -87.459733

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Ozone	U	S	Population Exposure / Tuscaloosa MSA	U	C	Y	2/1/2001	active	


Facing North


Facing South


Facing East


Facing West

Monitor	Height of inlet	Distance of inlet above supporting structure	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway	Type of ground cover around site	Probe material	Bell Housing Material
UV Ozone	4m	1.1m	>20m	>20m	>40m	Grass	Teflon	Stainless Steel

APPENDIX A

Jefferson County Department Of Health (JCDH)

Jefferson County Department Of Health (JCDH)

Annual Air Monitoring Network Plan

May 2016

Regulations codified at 40 CFR Part 58, Appendices D (Network Design Criteria for Ambient Air Quality Monitoring) and E (Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring) were reviewed to determine if modifications to the existing air monitoring network are required.

Summary of JCDH Network Review

Lead (Pb) monitoring is required in major urbanized areas where Pb levels have been shown or are expected to be of concern due to the proximity of Pb point source emissions. According to the new lead regulations, sources emitting a half ton or more of lead per year would be candidates for lead ambient air monitoring. There are no longer any significant point sources of lead emissions greater than the half ton threshold in Jefferson County. Therefore, based on past monitoring and 2015 emissions inventory data, a lead source monitoring site is not required.

The EPA revised the NAAQS for Nitrogen Dioxide and it was promulgated in February 2010. In this rule, EPA required changes to the monitoring network that will focus monitoring resources to capture short-term NO_2 concentrations near heavily trafficked roads, to assess area-wide (or community-wide) NO_2 concentrations, and to assess NO_2 concentrations for vulnerable and susceptible populations. Jefferson County has installed the requisite monitoring site in October 2013 which became operational on January 1, 2014. NO_y monitoring began at the NCore site January 1, 2011.

To determine localized concentrations of PM2.5 in the North Birmingham area, the Department conducted PM2.5 monitoring at the Shuttlesworth site for one year [from July 1, 2013 to September 30, 2014]. This was operated as a special purpose, non-SLAMS monitor. Concentrations and concentration variations were very similar to those at next closest, proximate site, the North Birmingham monitoring site. JCDH will continue to monitor for PM2.5 at this site using a continuous monitoring method where the results will be publically accessible through the AirNow website located in the JCDH webpage.

Continuous $PM_{2.5}$ SPM (Special Purpose Monitors)

Continuous $PM_{2.5}$ monitoring is required in relation to the minimum SLAMS monitoring requirement stated above; i.e., equal to at least one-half (round up) the minimum monitoring requirement. Jefferson County is required to operate two continuous $PM_{2.5}$ monitors. However, six continuous $PM_{2.5}$ monitors are actually operated in Jefferson County for the purpose of AirNow mapping and to support our EMPACT website. Continuous $PM_{2.5}$ monitors are collocated with manual $PM_{2.5}$ monitors at North Birmingham, Wylam, McAdory and Leeds for quality assurance purposes.

Network Review Findings

The existing network as summarized in the attached Air Monitoring Network Description complies with 40 CFR Part 58 requirements. The described network should adequately characterize typical population exposure concentrations and compliance status with the NAAQS for pollutants of concern.

The monitoring site location map can be found in APPENDIX C.

JCDH AIR MONITORING NETWORK DESCRIPTION

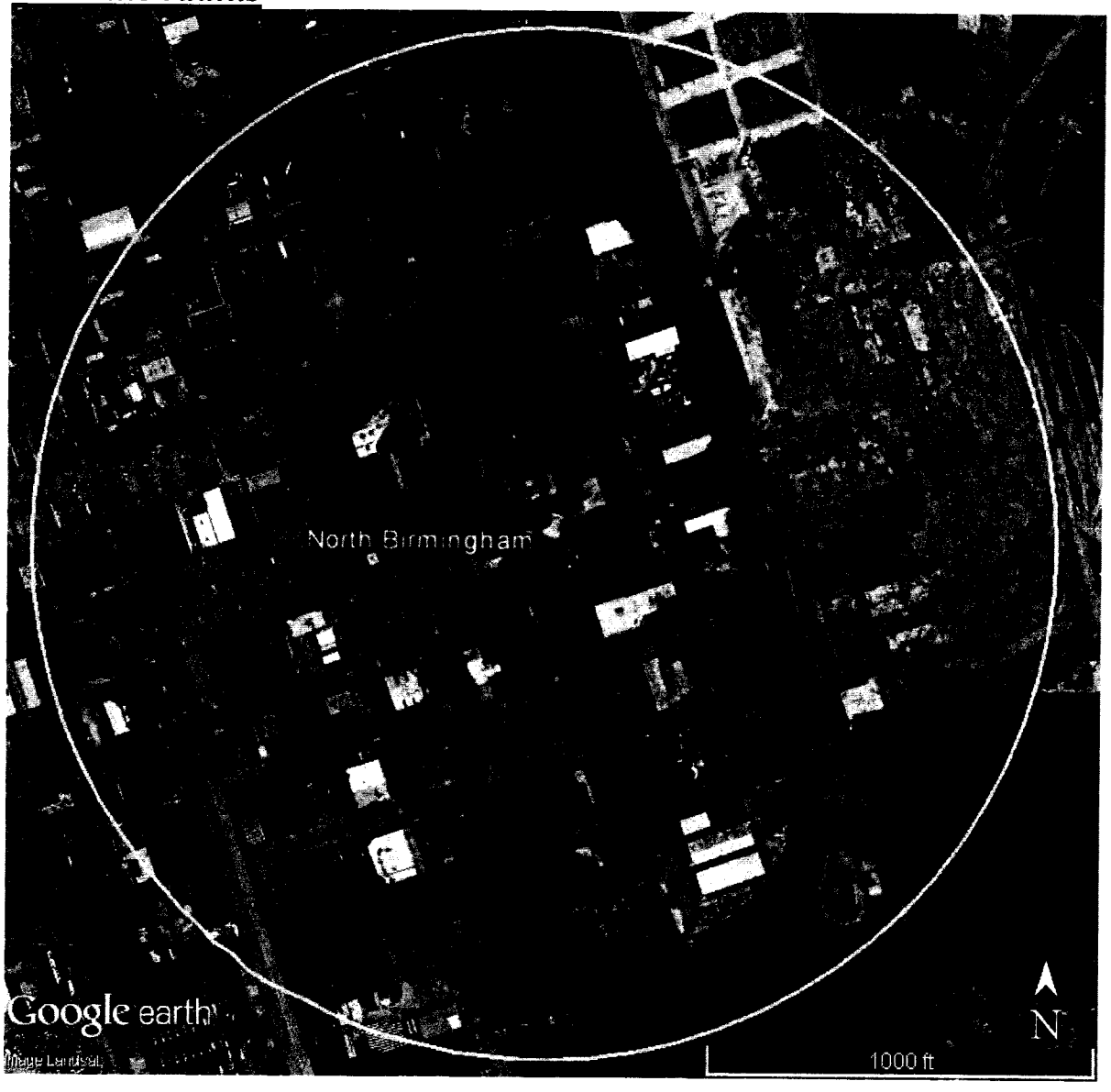
(As of 2016)

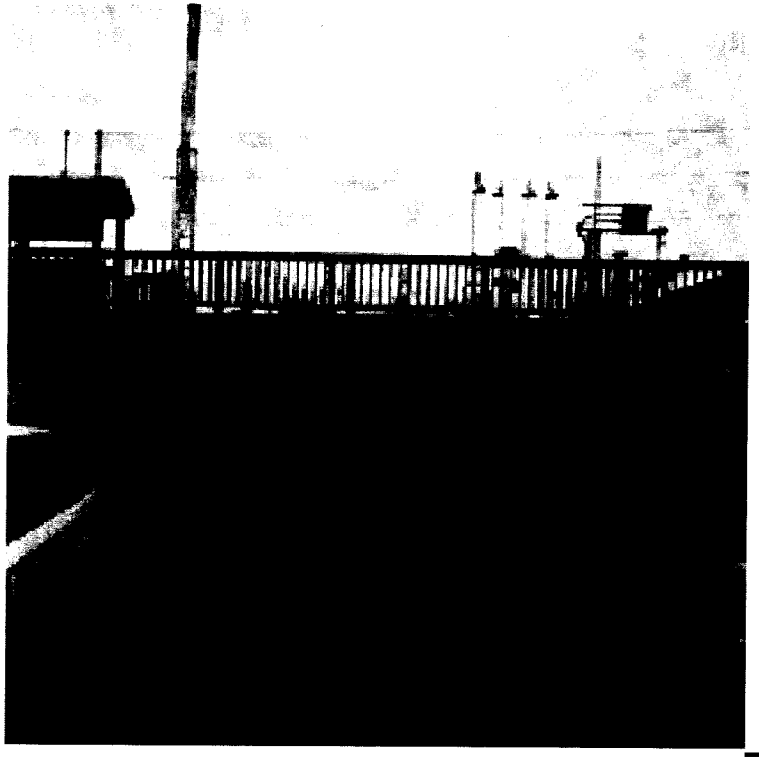
Abbreviations	
Scale	
N	Neighborhood (0.5 – 4 Kilometers)
U	Urban (overall citywide conditions, 4 -50 kilometers
R	Regional (usually rural, with homogenous geography, tens to hundreds of kilometers)
MC	Microscale
Type	
CS	Core SLAMS
NCS	NCore SLAMS
S	SLAMS
SPM	Special Purpose Monitor
Operating Schedule	
C	Continuous monitor
D	Daily 24-hour samples
3	1 24-hour sample every 3 days (on national schedule)
6	1 24-hour sample every 6 days (on national schedule)
Methods	
H	Hi-volume SSI sampler
L	Low Volume SSI
T	TEOM continuous monitor
U	UV photometric ozone analyzer
S	Hi-Volume Total Suspended Particulate monitor
G	Lead Analysis by Graphite furnace
P	Pulsed Fluorescent
I	Non Dispersive Infrared
F	Gas Filter Correlation
B	Beta Attenuation
UP	Chemiluminescence- photolytic
NAAQS[2]	
Y,N	Data suitable for comparison to NAAQS

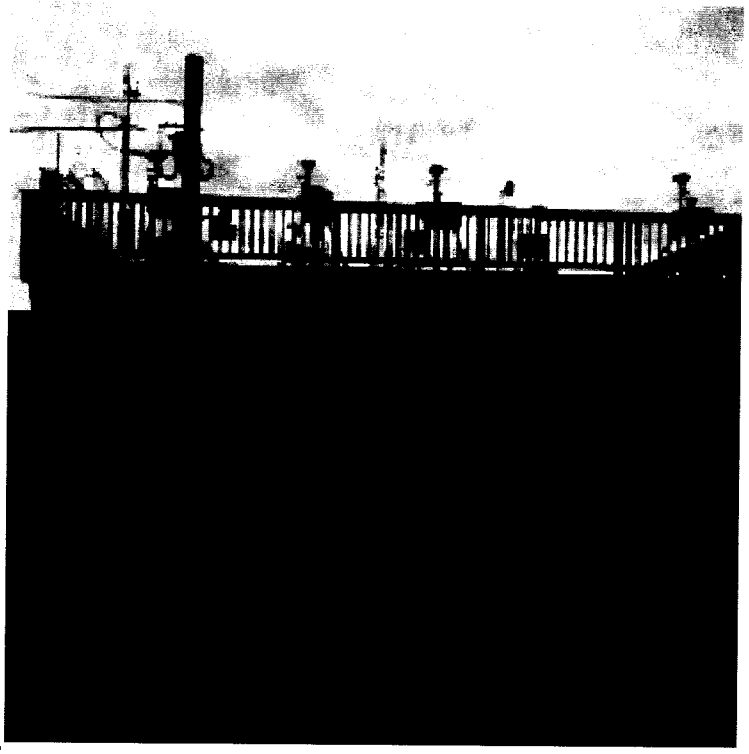
North Birmingham/NCore

[2] Collocated monitors must be operated in the same manner as the Federal Reference Method; one monitor at the site is designated as the main monitor for comparison to the NAAQS.

0.25 mile radius





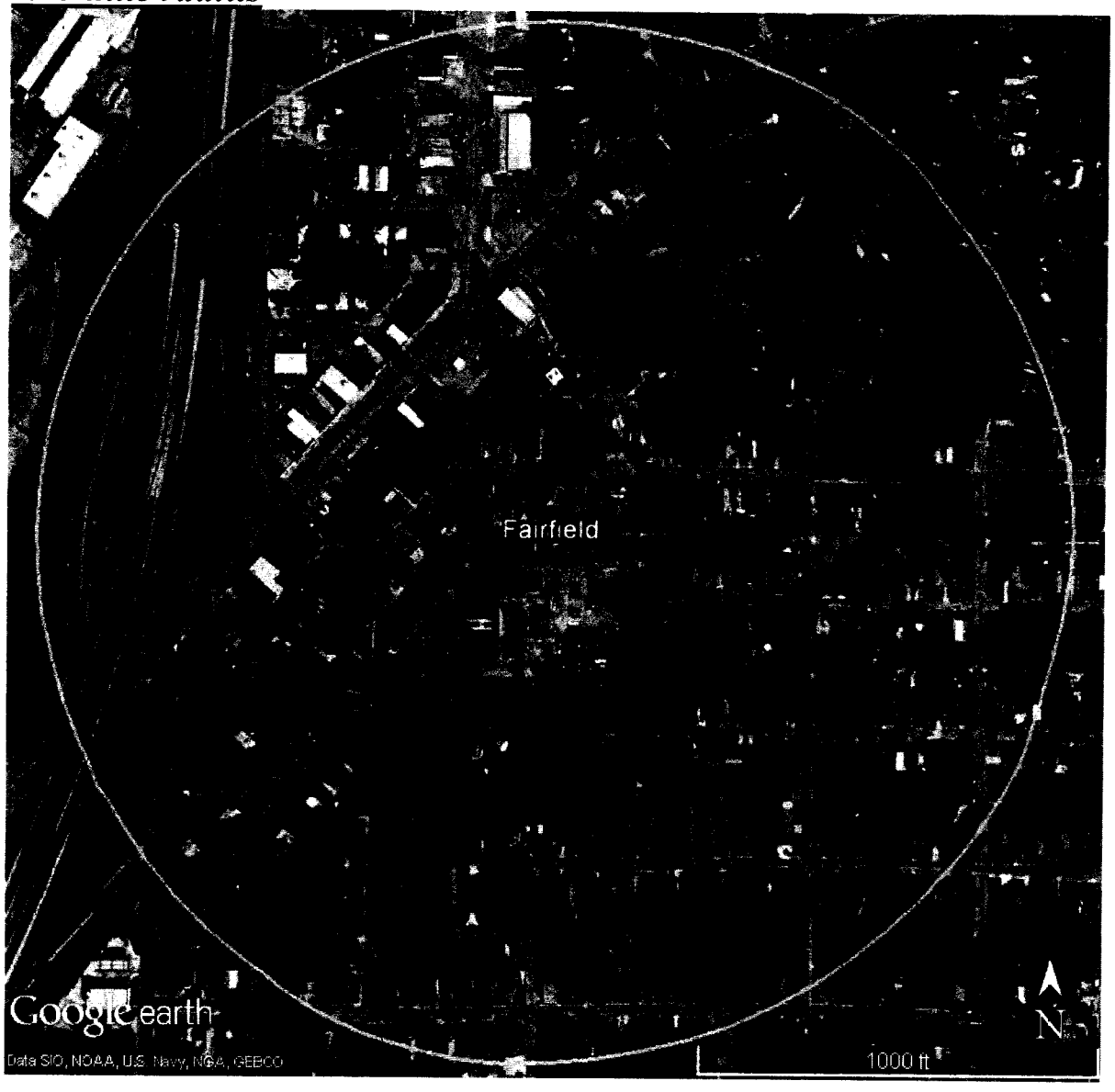


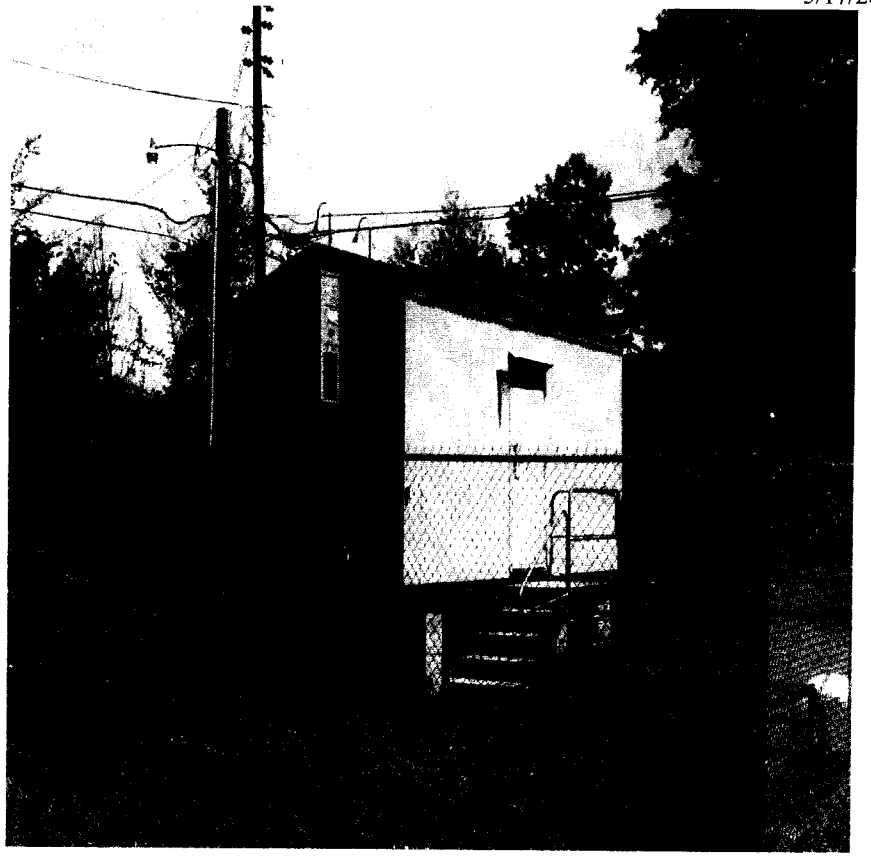
Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Ozone	01-073-0023	3009 28th St. North	33.553.056 -86.815000	N	NCS	Neighborhood	03/01/00	Active	U	C	Y	*Year Round*
SO2				N	NCS	High Population Exposure	01/01/11	Active	P	C	Y	
CO				N	NCS	Neighborhood	03/01/00	Active	F	C	Y	

NOy				N	NCS	High Population Exposure	01/01/11	Active	UP	C	Y	
NO_2				N	NCS	High Population Exposure	01/01/14	Active	UP	C	Y	*Began 01/2014*
Low Vol PM10				N	NCS	High Concentration	01/01/03	Active	L	3	Y	*LC/Lead//STP*
Low Vol PM10				N	NCS	Collocated Sampler	01/01/03	Active	L	6	Y	*LC/Lead//STP*
Cont PM10				N	SPM	High Concentration	02/01/13	Active	B	C	N	*Began 02/2013*
Lead				N	NCS	Neighborhood	01/01/11	Active	L	3	Y	*XRF Analysis*
Lead				N	NCS	Collocated Sampler	01/01/11	Active	L	6	Y	*XRF Analysis*
PM2.5				N	NCS	High Concentration	01/01/99	Active	L	3	Y	
PM2.5				N	NCS	Collocated Sampler	01/01/99	Active	L	6	Y	
Cont PM2.5				N	SPM	High Concentration	02/01/13	Active	B	C	N	*Began 02/2013*
PM10 IMPROVE				N	NCS	High Concentration	04/21/04	Active		3	N	
PM2.5 IMPROVE SPECIATION				N	NCS	High Concentration	04/21/04	Active		3	N	
PM2.5 STN SPECIATION				N	NCS	High Concentration	01/01/01	Active		3	N	*1 in 3 Alternate Schedule*
RadNet				N	NCS	High Concentration	04/19/07	Active		C	N	

Fairfield

0.25 mile radius

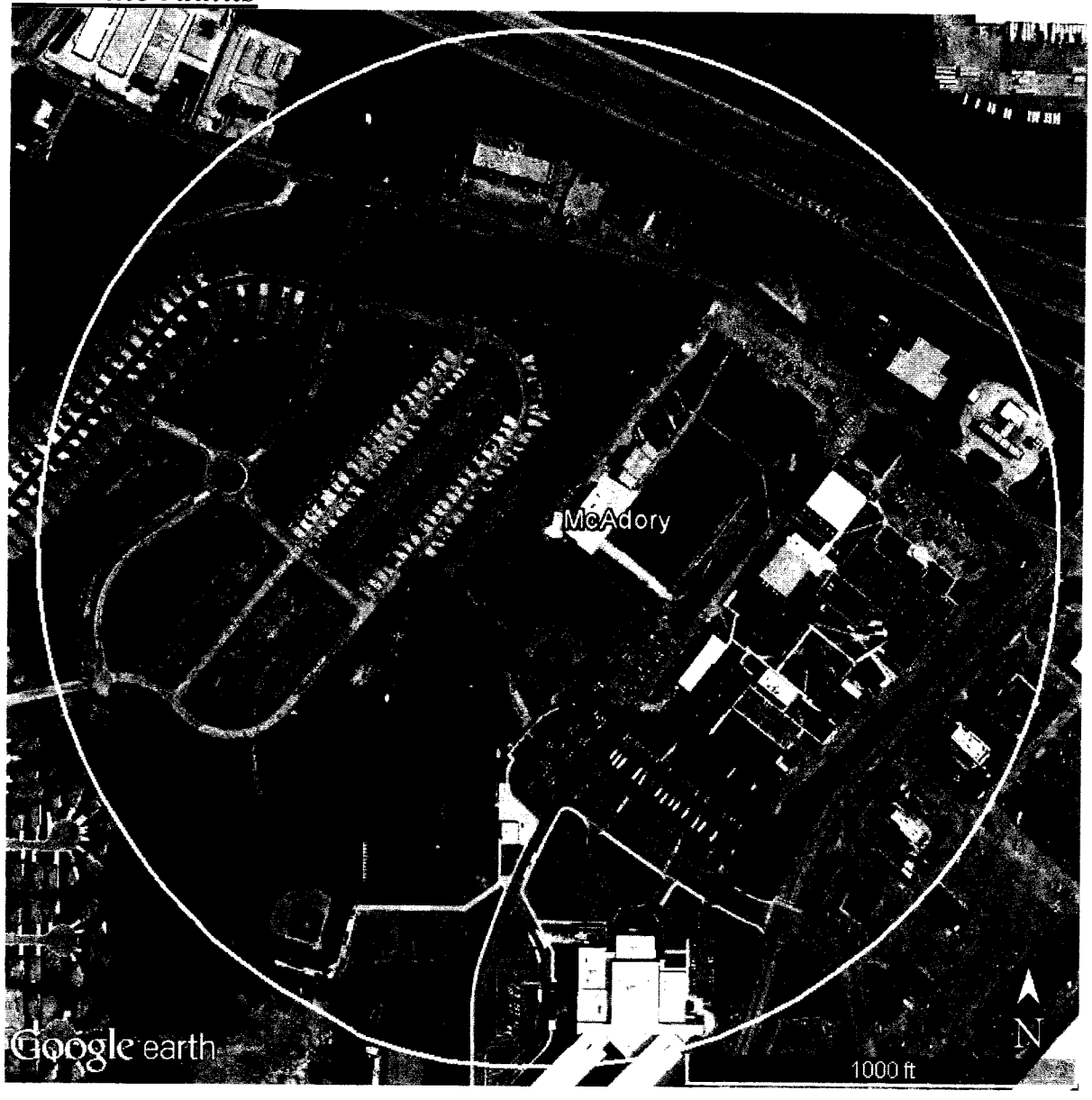


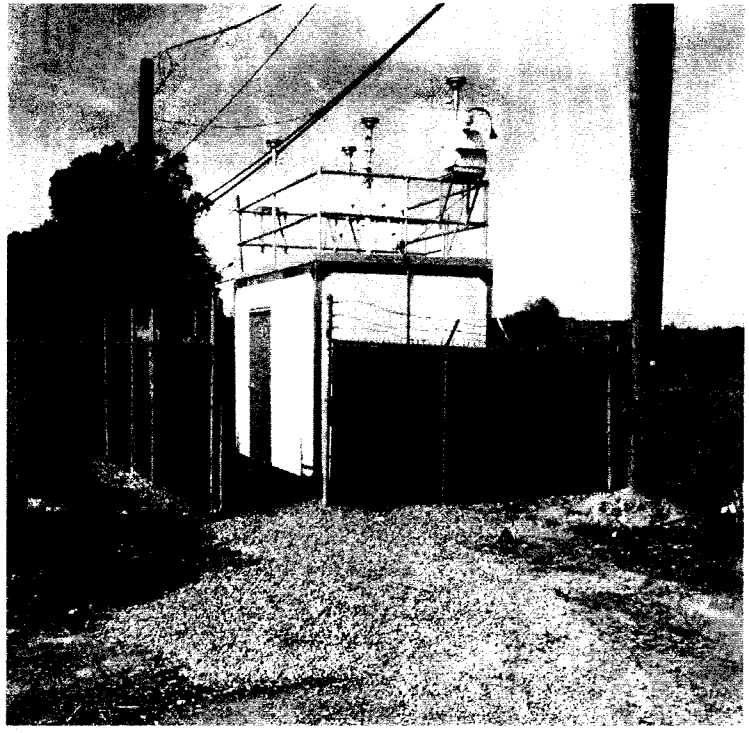


Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Ozone	01-073-1003	5229 Court B	33.485556 -86.915000	N	S	High Population Exposure	04/26/74	Active	U	C	Y	*March - October*
SO2				N	S	High Population Exposure	12/11/74	Active	P	C	Y	
CO				N	S	High Concentration	06/17/87	Active	I	C	Y	

McAdory

0.25 mile radius

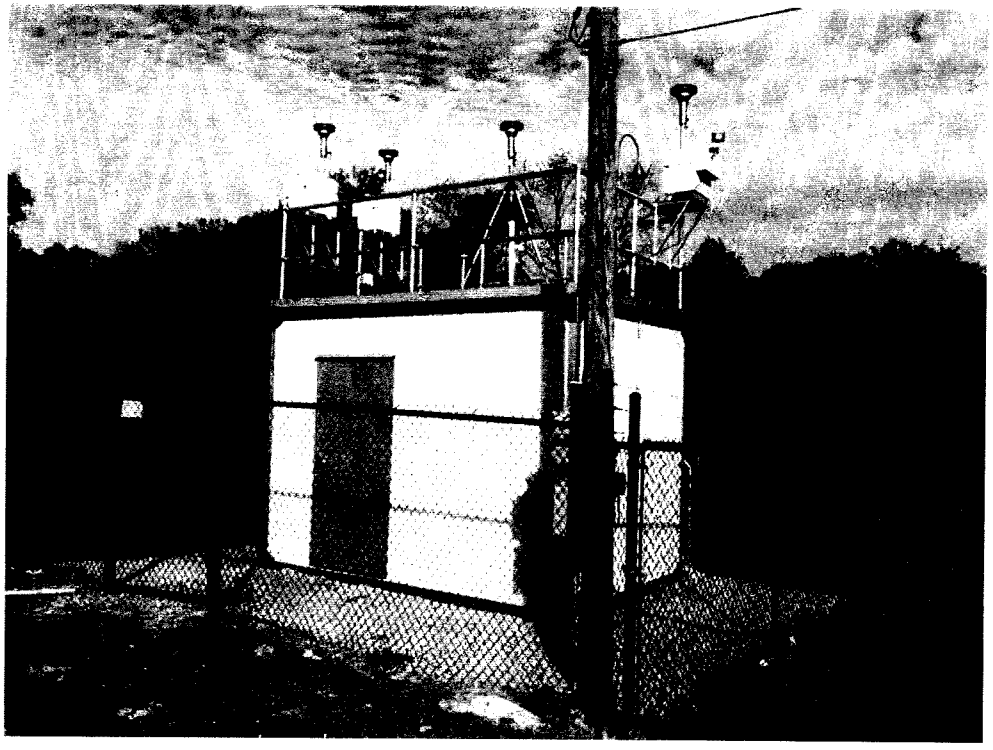




Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Ozone	01-073-1005	4800 McAdory School Rd.	33.331111 -87.003611	U	S	High Concentration	06/17/87	Active	U	C	Y	*March - October*
PM2.5				N	SPM	Typical Population	01/01/99	Active	L	3	Y	
PM2.5				N	SPM	Collocated Sampler	01/01/99	Active	L	6	Y	
Cont PM2.5				N	SPM	Typical Population	01/01/99	Active	T	C	N	

Leeds

0.25 mile radius

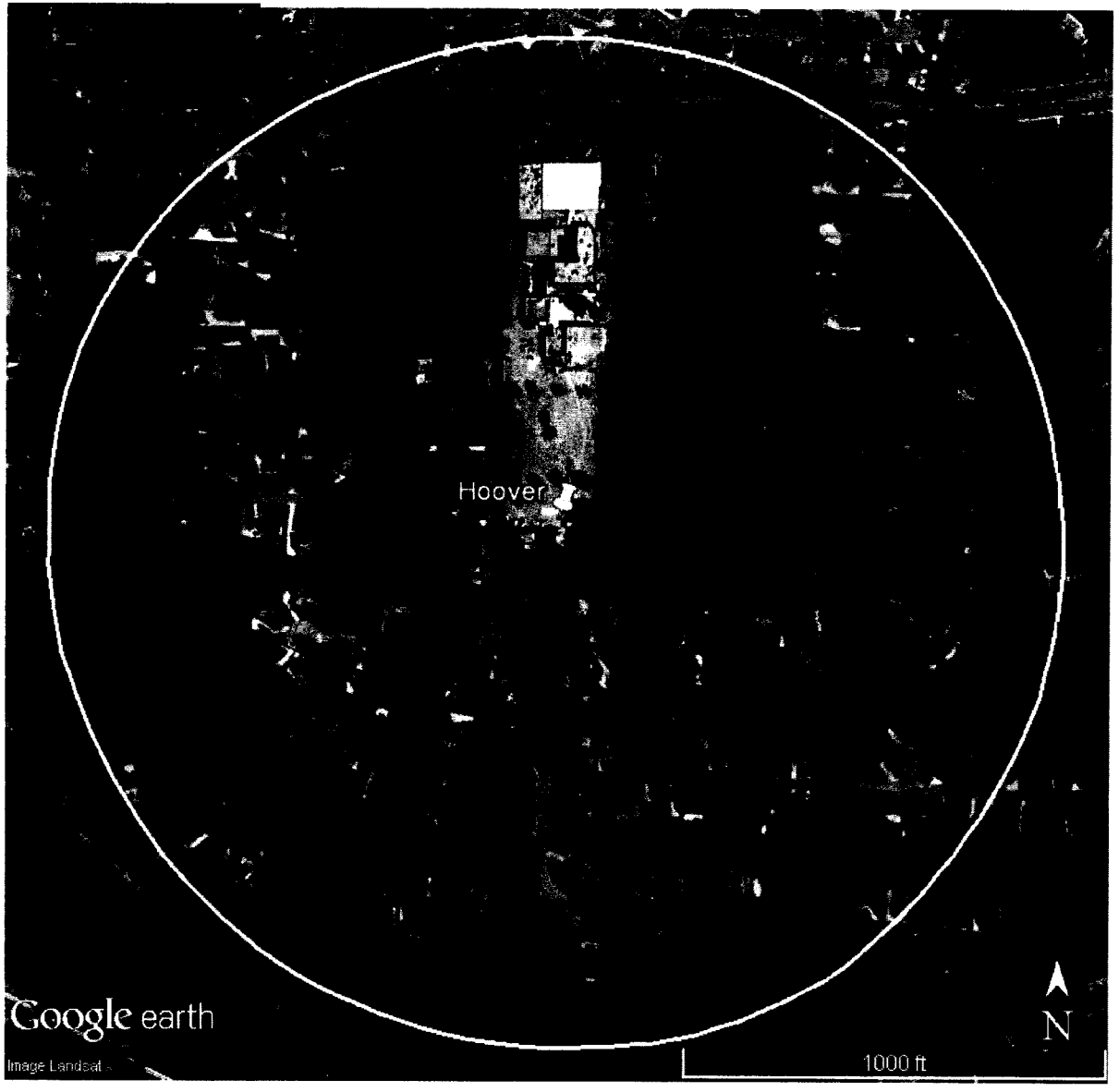


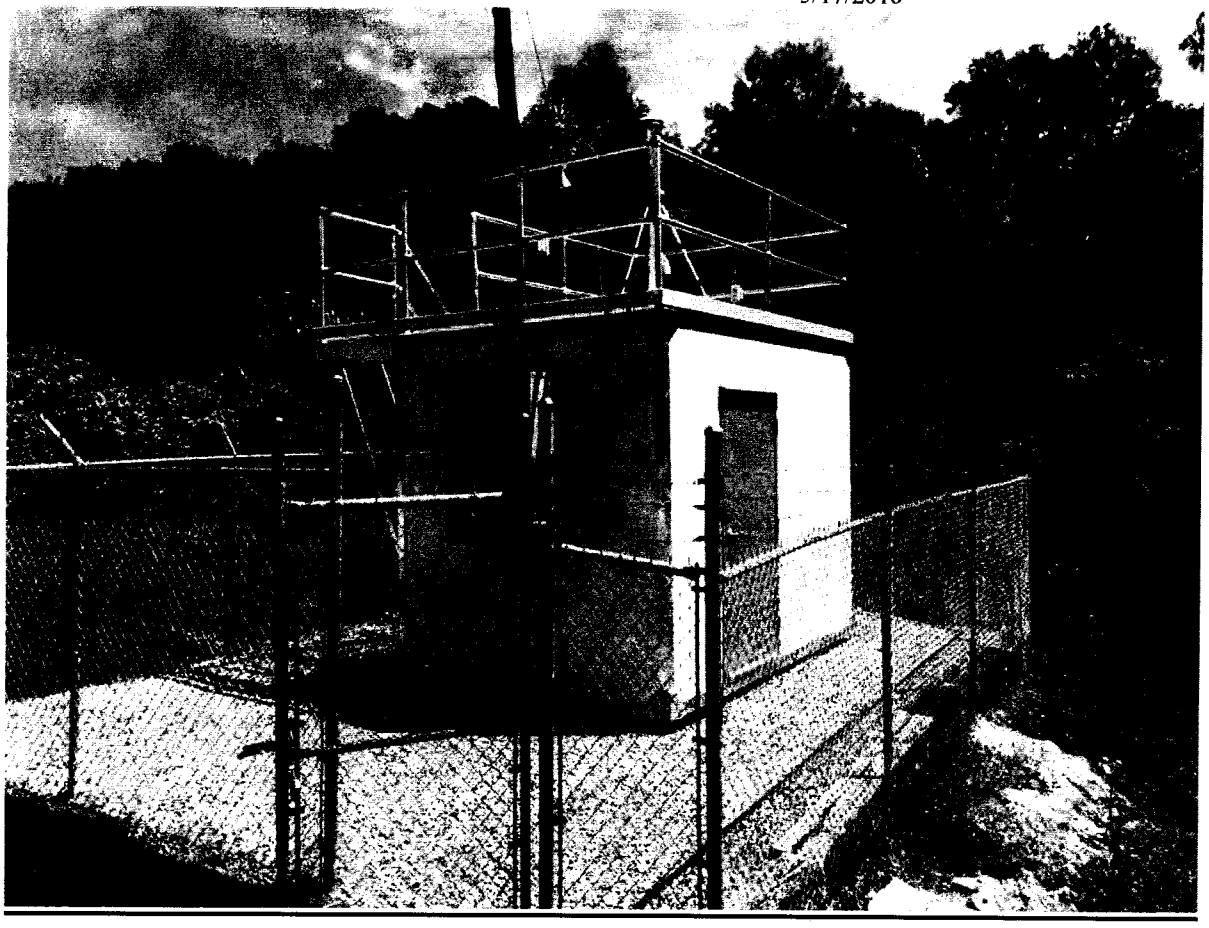
Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Ozone	01-073-1010	201 Ashville Rd.	33.545278 -86.549167	N	S	High Population Exposure	03/01/01	Active	U	C	Y	*March - October*
Low Vol PM10				N	S	Typical Population	01/01/04	Active	L	6	Y	*LC converted to STP*
PM2.5				N	SPM	Typical Population	01/01/04	Active	L	6	Y	

PM2.5				N	SPM	Collocated Sampler	01/01/04	Active	L	6	Y	
Cont PM2.5				N	SPM	Typical Population	01/01/04	Active	T	C	N	

Hoover

0.25 mile radius

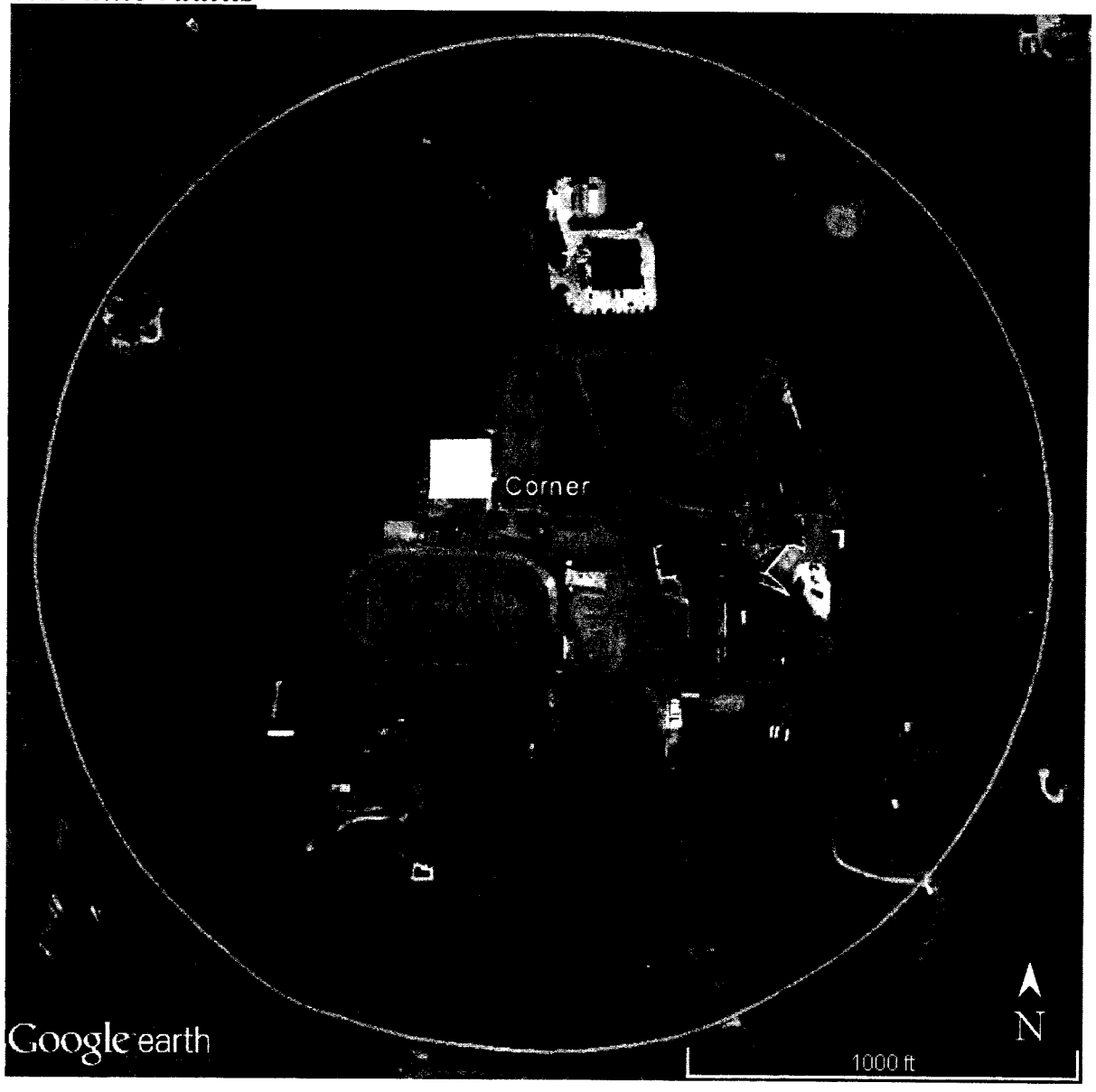


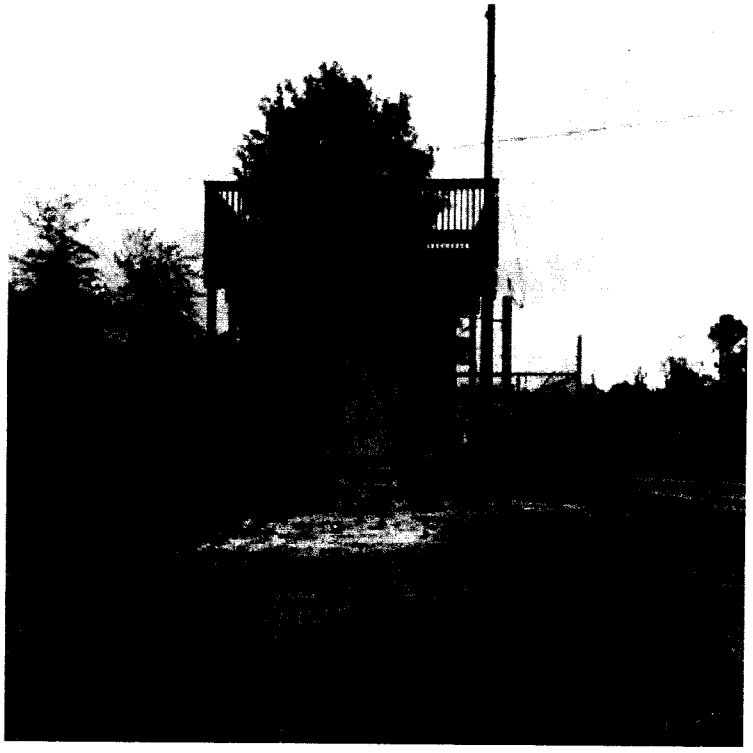


Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Ozone	01-073-2006	3425 Tamassee Lane	33.386389 -86.816667	N	S	High Population Exposure	09/01/88	Active	U	C	Y	*March - October*
Cont PM2.5				N	SPM	High Population Exposure	07/25/01	Active	T	C	N	

Corner

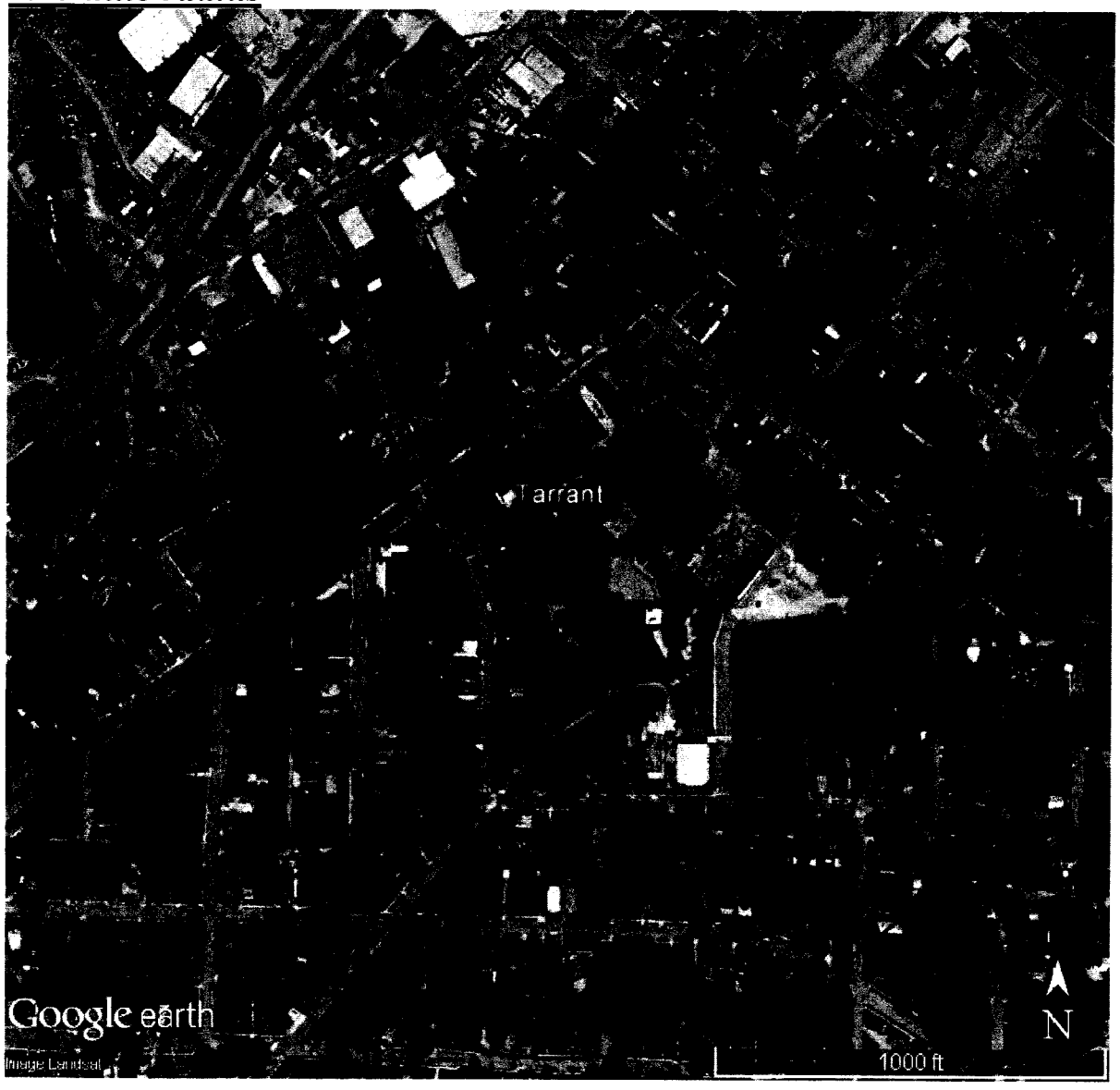
0.25 mile radius





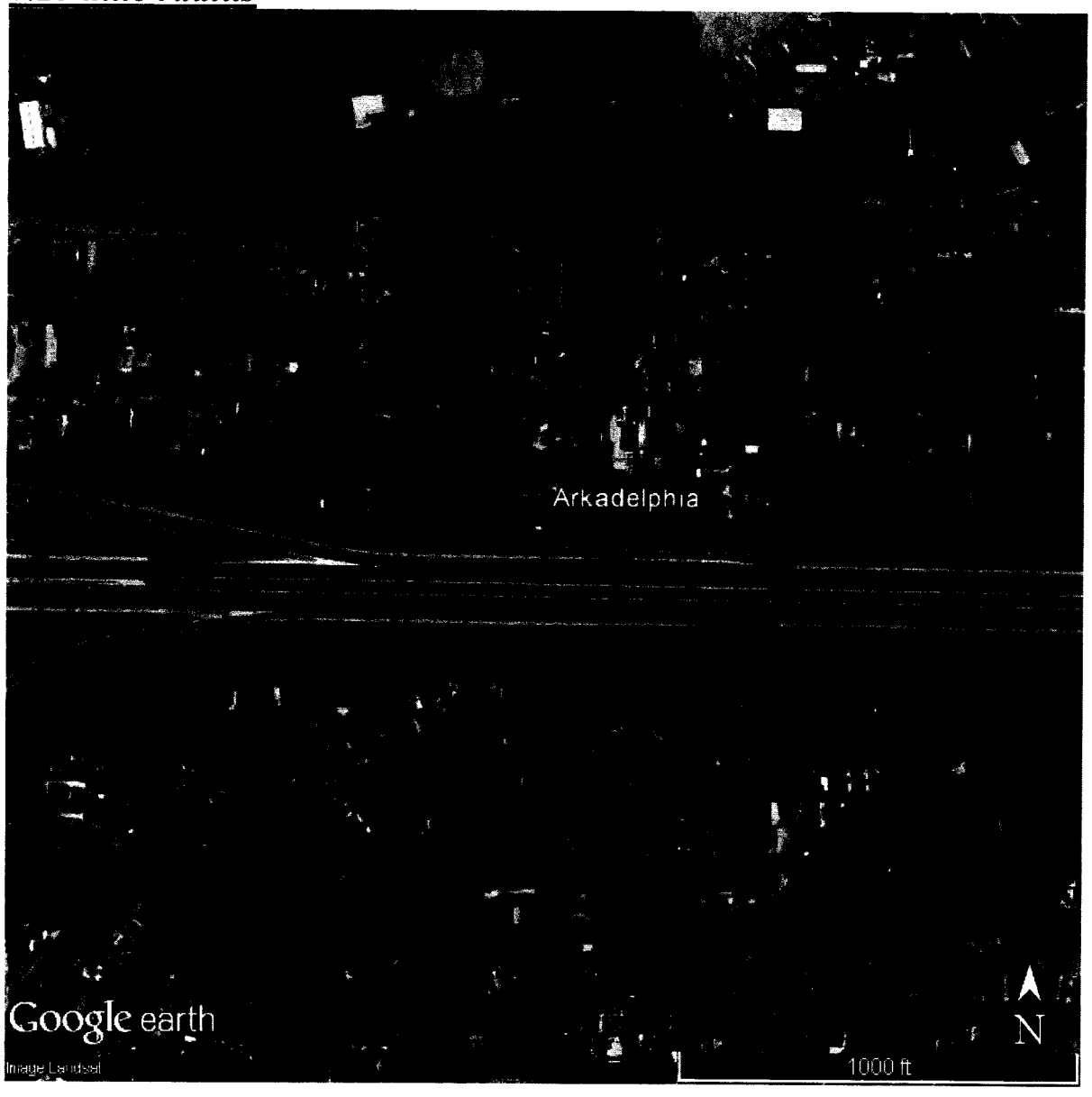
Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Ozone	01-073-5003	1005 Corner School Rd.	33.801667 -86.942500	U	S	Typical Population	03/01/00	Active	U	C	Y	*March - October*
Cont PM2.5				U	SPM	Typical Population	07/22/01	Active	T	C	N	

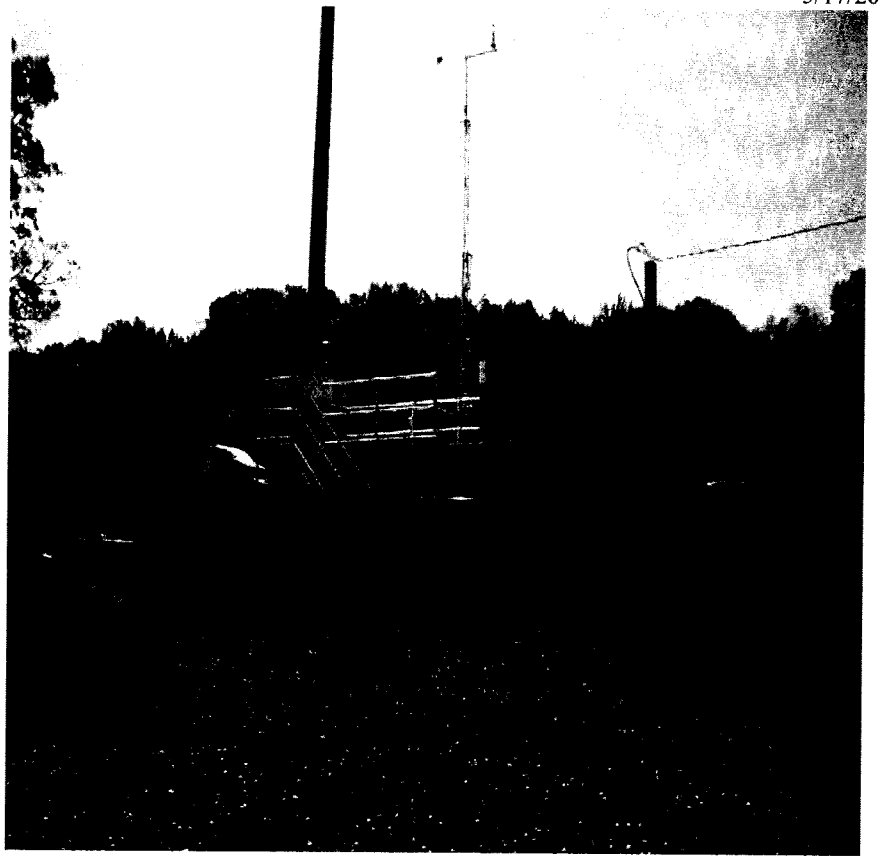
Tarrant
0.25 mile radius



Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Ozone	01-073-6002	1269 Portland St.	33.578333 -86.773889	N	S	High Population Exposure	03/24/80	Active	U	C	Y	*March - October*
Low Vol PM10				N	S	High Population Exposure	01/01/13	Active	L	6	Y	*LC converted to STP*
Cont PM10				N	S	High Population Exposure	03/24/80	Active	T	C	Y	

Arkadelphia
0.25 mile radius

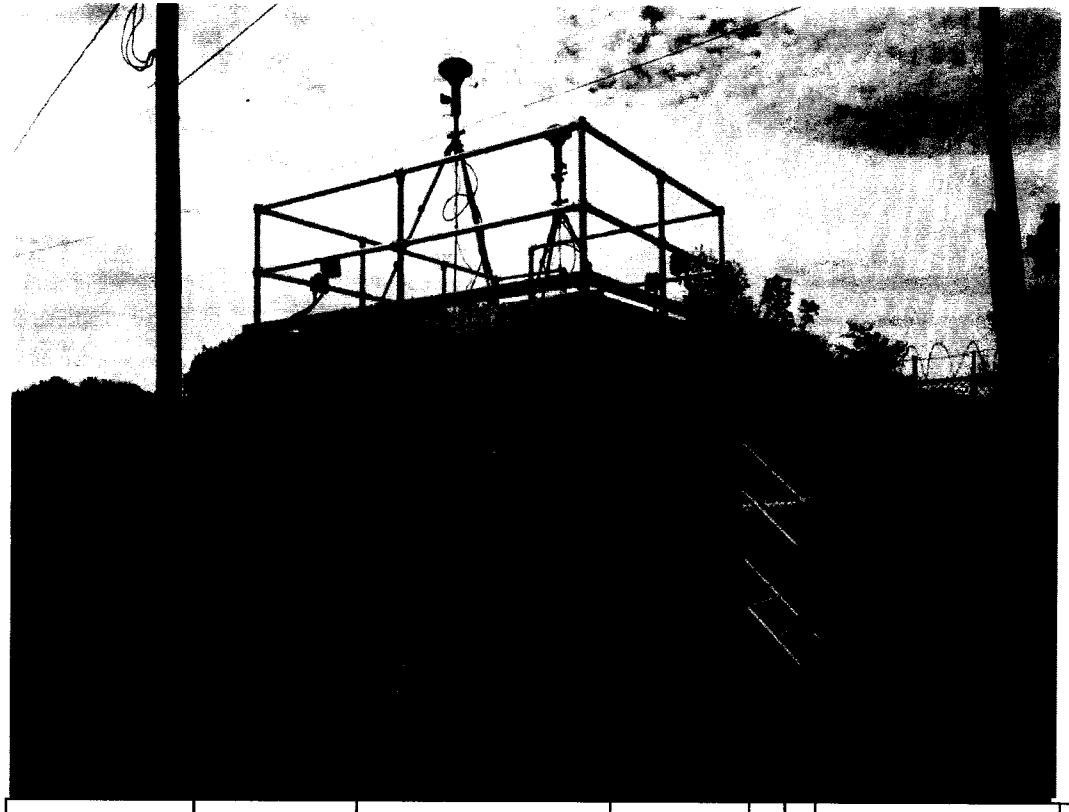




Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
CO	01-073-2059	1110 5th Street West	33.521427 -86.844112	N	NS	Neighborhood	01/01/14	Active	F	C	Y	
NO2				N	S	Neighborhood	01/01/14	Active	UP	C	Y	*Began 01/2014*
PM2.5				N	S	Neighborhood	01/01/14	Active	L	6	Y	*Began 01/2014*

Shuttlesworth

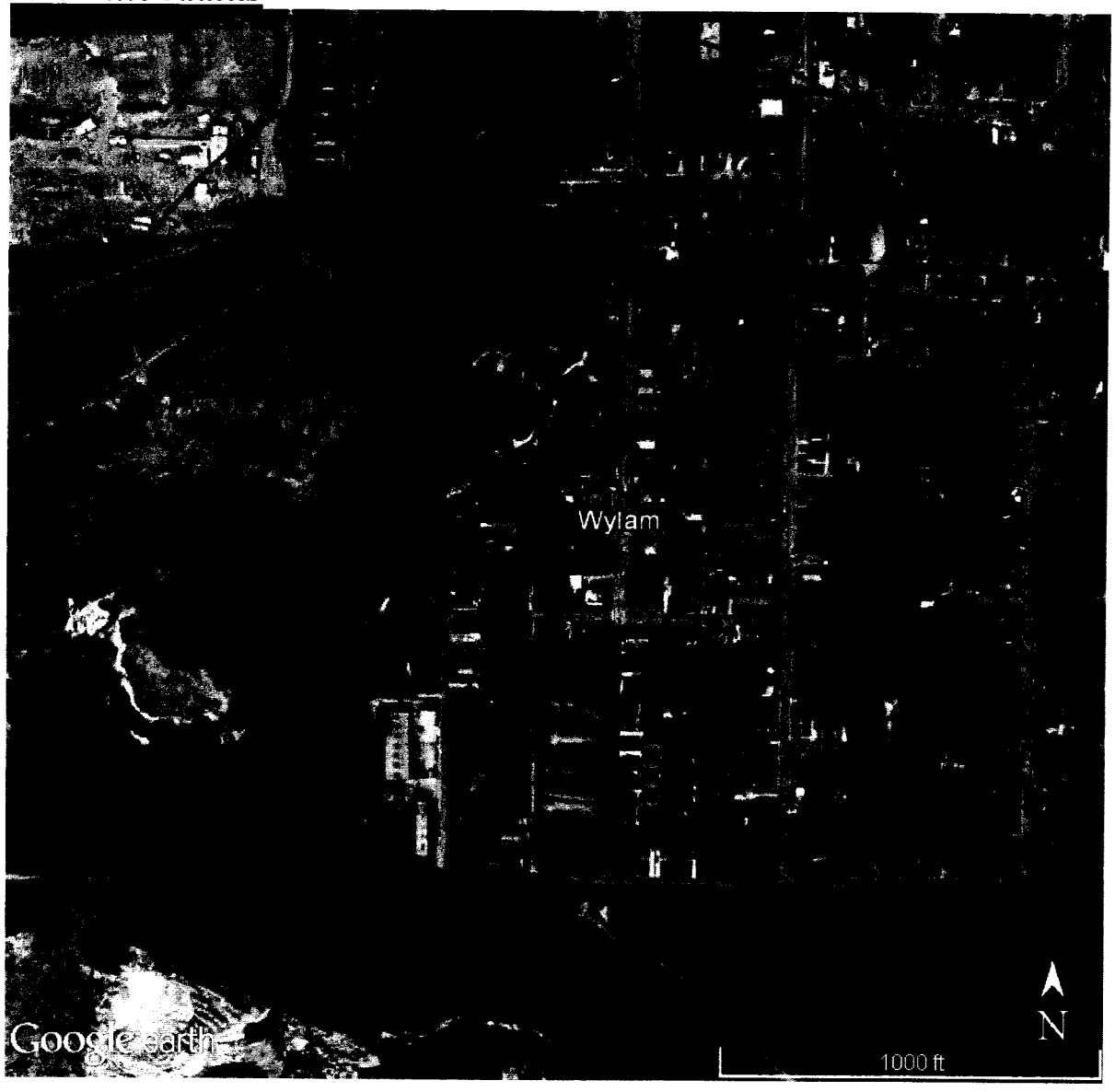
0.25 mile radius

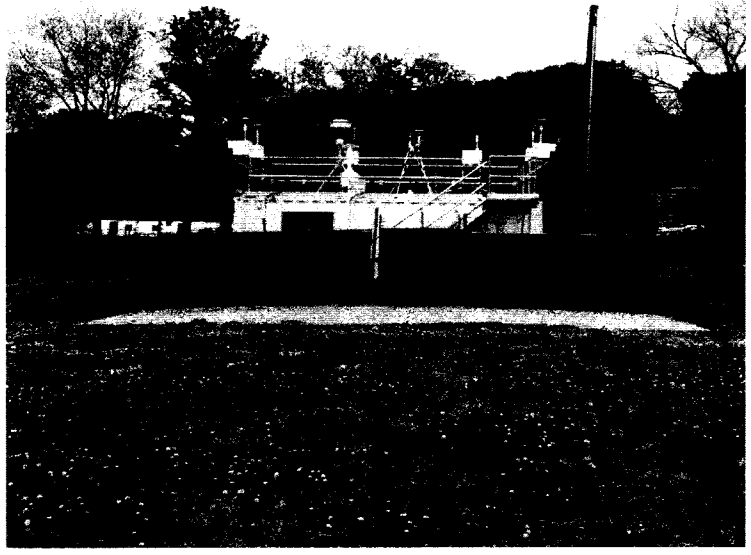


Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Cont PM10	01-073-6004	4113 Shuttlesworth Drive	33.565278 -86.796389	N	S	High Population Exposure	01/25/1996	Active	T	C	Y	
Cont PM2.5				N	S	Neighborhood	02/01/2016	Active	T	C	N	
SO_2				N	S	Neighborhood				C	N	*Will not be installed until 4th Quarter 2016*

Wylam

0.25 mile radius





Pollutant	AQS Site ID	Address	Latitude Longitude	SCALE	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	NAAQS	Comment
Low Vol PM10	01-073-2003	1242 Jersey Street	33.499722 -86.924167	N	S	High Population Exposure	01/01/03	Active	L	6	Y	*LC converted to STP*
Low Vol PM10				N	S	Collocated Sampler	01/01/03	Active	L	6	Y	*LC converted to STP*
Cont PM10				N	SPM	High Population Exposure	07/13/01	Active	T	C	Y	
PM2.5				N	S	High Population Exposure	01/01/99	Active	L	3	Y	
PM2.5				N	S	Collocated Sampler	01/01/99	Active	L	6	Y	

Cont PM2.5				N	S P M	High Population Exposure	07/13/01	Active	T	C	N	
PM2.5 SPECIATION				N	S	High Concentration	10/01/01	Active		6	N	*1 in 3 Alternate Schedule*

APPENDIX B

Huntsville Department of Natural Resources and Environmental Management (HDNREM)

Annual Air Monitoring Network Plan

ANNUAL AIR MONITORING NETWORK PLAN

April 28, 2016

Regulations codified at 40 CFR Part 58, Appendices A (Quality Assurance Requirements for SLAMS, SPMs and PSD Air Monitoring), C (Ambient Air Quality Monitoring Methodology), D (Network Design Criteria for Ambient Air Quality Monitoring) and E (Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring) were reviewed to determine if modifications to the existing air monitoring network are required.

NCore Ambient Air Monitoring Stations

Each State is required to operate one NCore site (multipollutant). Huntsville was not selected for the NCore site.

PAMS (Photochemical Assessment Monitoring Stations)

PAMS monitoring is required in areas classified as serious, severe, or extreme for the 8-hour ozone standard. Huntsville is presently classified as an ozone attainment area. Consequently, PAMS monitoring is not required.

SLAMS (State and Local Air Monitoring Stations)

The minimum ozone monitoring requirements are based on MSA (Metropolitan Statistical Area) populations and 3-year design value concentrations. The Huntsville MSA population is 417,593 based on the 2010 decennial census population. Huntsville's 3-year design value concentration for 2013-2015 is .064 ppm. MSA's with populations of 50,000 to less than 350,000 having a design value $\geq$85% of the O3 NAAQS are required to operate one ozone site. MSA's with populations of 350,000 to less than 4,000,000 are required to operate two ozone sites. Huntsville operates two ozone monitoring sites, as required.

There is a two-tier minimum nitrogen dioxide (NO_2) monitoring requirement. Near-road microscale monitoring is required in each CBSA (Core-based statistical area) with a population of 500,000 or more. Area-wide high concentration monitoring is required in each CBSA with a population of 1,000,000 or more. The Huntsville CBSA population is 417,593. Huntsville is not required to operate a SLAMS NO_2 monitor.

The minimum monitoring requirements for carbon monoxide (CO) require one monitor be collocated with a near-road NO_2 monitor in each CBSA with a population of 1,000,000 or more. Huntsville is not required to operate a SLAMS CO monitor.

The minimum sulfur dioxide (SO_2) monitoring requirements are based on a Population Weighted Emissions Index (PWEI), which is calculated by multiplying the population of the CBSA and the total SO_2 emissions {using the most recent published version of the National Emissions Inventory (NEI)} within the CBSA area. The resulting product is then divided by one million, representing million persons-tons per year. Areas having a PWEI greater than 1,000,000 are required to operate 3 monitors; areas having a PWEI equal to or greater than 100,000 but less than 1,000,000 are required to operate 2 monitors; areas having a PWEI greater than 5,000 but less than 100,000 are required to operate 1 monitor. The Huntsville PWEI is 135 (based on 2010 decennial census population and 2011 NEI, total SO_2 emissions data for the Huntsville CBSA). The 2011 NEI data was still used in this calculation since 2014 NEI data is not yet available. Huntsville is not required to operate a SLAMS SO_2 monitor.

Lead monitoring (Pb) is required in areas where Pb levels have been shown or are expected to be of concern due to the proximity of Pb point source emissions. Generally, industrial sources emitting 0.5 ton or more of lead per year and airports emitting 1.0 ton or more per year would be candidates for lead ambient air monitoring. There are no significant point sources of lead emissions in Huntsville. Based on past monitoring and emissions inventory data, a SLAMS lead site is not required.

Huntsville's PM_{10} concentrations are less than 80 percent of the PM_{10} NAAQS (National Ambient Air Quality Standards). Based on Huntsville's MSA population being between 250,000-500,000 and low concentrations, Huntsville is required to operate 1 site. Huntsville operates 3 PM_{10} sites located in south, central, and north Huntsville. These monitors can be operated at very low cost and provide good spatial coverage within the city. Experience has shown that members of the public want ambient air monitoring to be performed in their part of the city, and the PM_{10} monitoring sites provide a monitoring presence at relatively low cost. Furthermore, the PM_{10} data provide an indirect indication of $PM_{2.5}$ spatial variability at a tiny fraction of the cost of operating multiple $PM_{2.5}$ sites.

The minimum $PM_{2.5}$ monitoring requirements are based on MSA populations and 3-year design value concentrations. Huntsville's 3-year design value concentration for 2013-2015 is 18 $\mu g/m^3$ for the 24-hour standard and 8.6 $\mu g/m^3$ for the annual standard. MSA's with populations of 50,000 to less than 500,000 having a design value $\geq$ 85% of the $PM_{2.5}$ NAAQS are required to operate one $PM_{2.5}$ site on a 1 in 3 day sampling frequency. Huntsville operates one $PM_{2.5}$ site on a 1 in 3 day schedule to meet this requirement. Note: Operating frequency increases to daily sampling when the 24-hour design value is within $\pm$ 5 percent of the 24-hour $PM_{2.5}$ NAAQS (34, 35, and 36 $\mu g/m^3$).

SLAMS sites were also evaluated to determine consistency of spatial scales with stated monitoring objectives. Reference the attached monitoring network description. In addition to the information listed below, the description also indicates site locations, monitoring methodologies, and operational schedules.

Site #	Site Name	Pollutant	Monitoring Objective	Current Spatial Scale based on ADT* for nearest streets	Scale Meets Objective
0002	Pulaski	PM_{10}	Population	Neighborhood	Yes
0004	South Parkway	PM_{10}	High Conc.	Middle	Yes
0014	Airport Road	PM_{10}	Population	Urban	Yes
0014	Airport Road	$PM_{2.5}$	Population	Urban	Yes
0014	Airport Road	O_3	Population	Neighborhood	Yes
0022	Capshaw	O_3	High Conc.	Urban	Yes

Notes:

Site 0002	Monitor 30.5 m from Pulaski Pike	ADT 13,800 Probe Ht. 4.3 m
Site 0004	Monitor 30.5 m from Mem. Pkwy.	ADT 37,800 Probe Ht. 4.3 m
Site 0014	Monitors 91 m from Airport Road	ADT 17,800 Probe Ht of PM monitors – 4.3 m
	Monitors 548 m from Mem. Pkwy.	ADT 84,750** Probe Ht of continuous monitor(s) 4.5 m
Site 0022	Monitor 30 m from Capshaw Road	ADT 10,500 Probe Ht. 4.0 m

ADT = Average Daily Traffic
*Traffic count data as provided by the Traffic Engineering Department represents 2014 data.
**ADT counts on Memorial Parkway immediately north and south of Airport Road averaged.

SPM (Special Purpose Monitors)

The special purpose PM_{10} monitor is operated Monday – Friday from 3:00 – 3:00 p.m. This data is used in reporting the daily Air Quality Index to the local print and television media.

Continuous $PM_{2.5}$ monitoring is required in relation to the minimum SLAMS monitoring requirement stated above; i.e., equal to at least one-half (round up) the minimum monitoring requirement. Huntsville is therefore required to operate one continuous $PM_{2.5}$ monitor. This monitor is a non-FRM/FEM/ARM. This data is used to support public reporting and forecasting of the Air Quality Index.

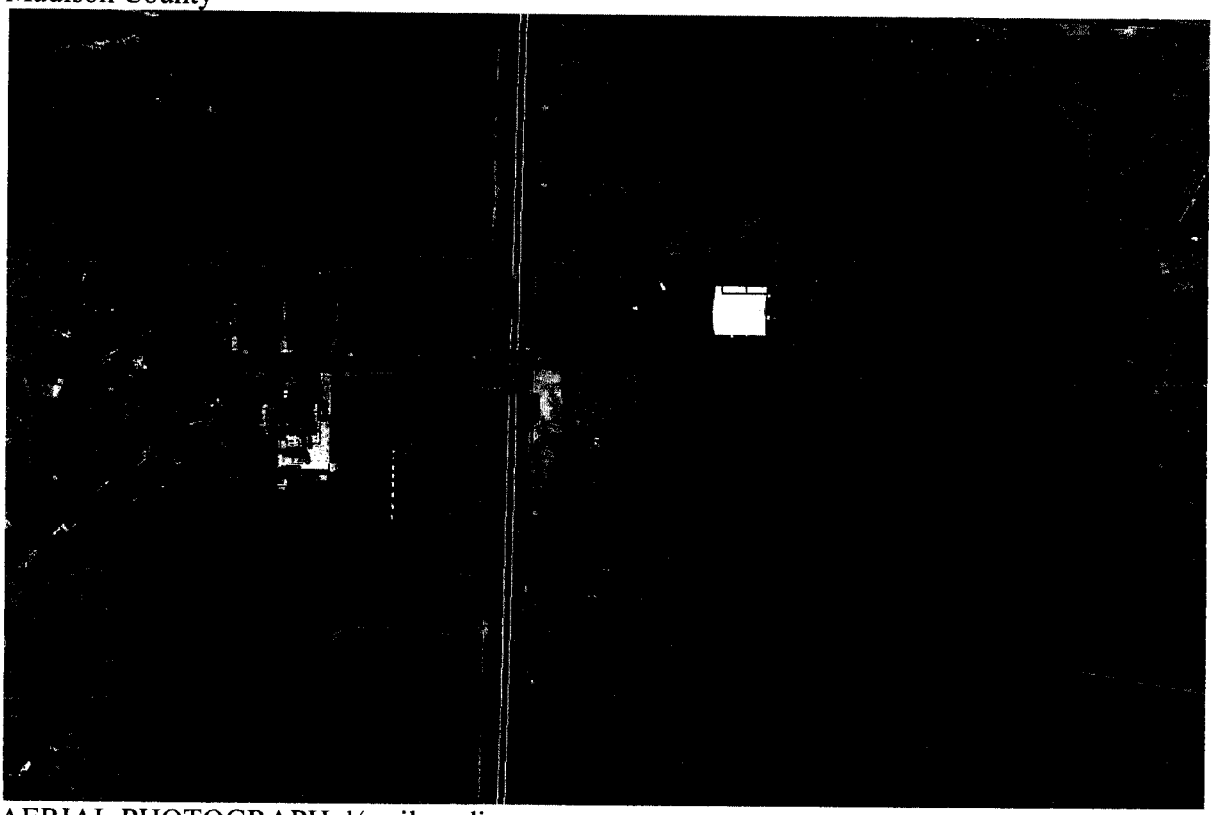
Site #	Site Name	Pollutant	Monitoring Objective	Current Spatial Scale based on ADT* for nearest streets	Scale Meets Objective
0003	Downtown Garage (AQI Reporting Site)	PM_{10}	Population	Neighborhood	Yes
0014	Airport Road	$PM_{2.5}$	Population	Urban	Yes

ADT = Average Daily Traffic

*Traffic count data as provided by the Traffic Engineering Department represents 2014 data.

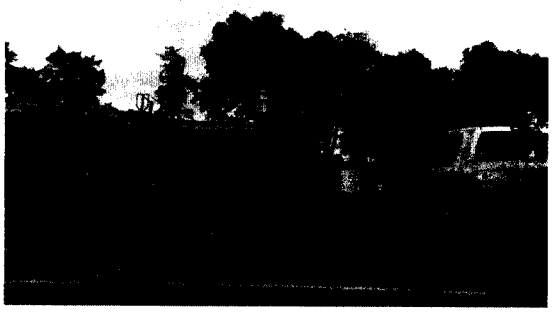
Fire Station #10 Site
5006 Pulaski Pike
Huntsville, Alabama 35810
Madison County

AQS Site ID: 01-089-0002
Latitude: 34.788333
Longitude: -86.616111



AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM-10	N	S	Population	H	6	Y	1/1/1991	Active	



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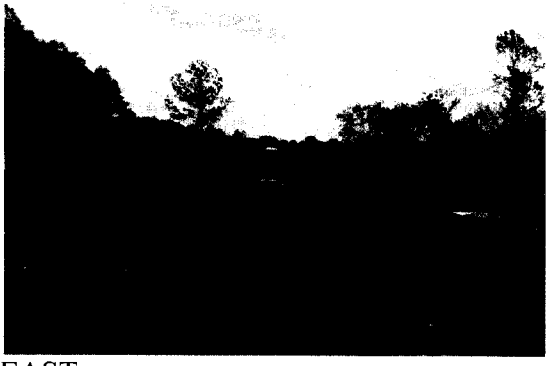


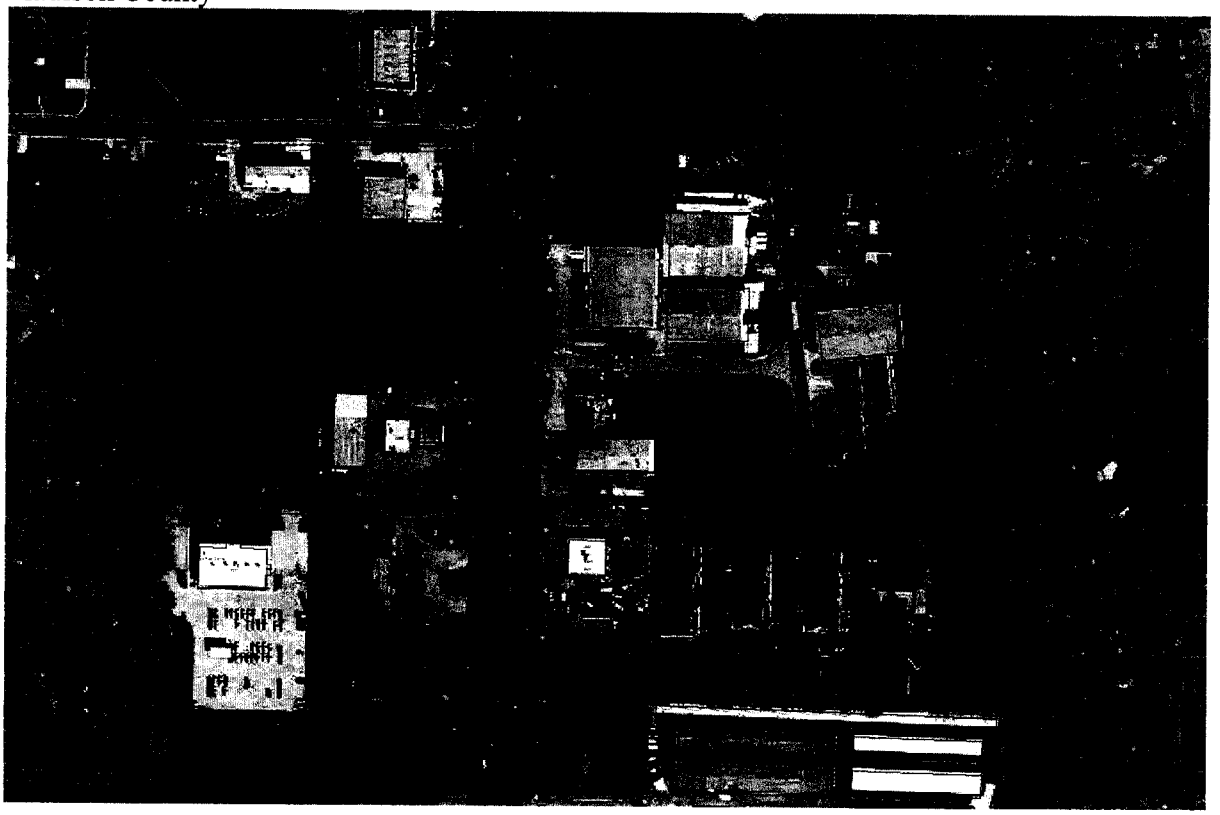
EAST

WEST

Pollutant	Distance between collocated inlets	Height Of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor from roadway (nearest pavement)	Type of ground cover around site	Probe material
PM-10	N/A	4.3m	24.4m	18.3m	30.5m	Asphalt Grass	N/A

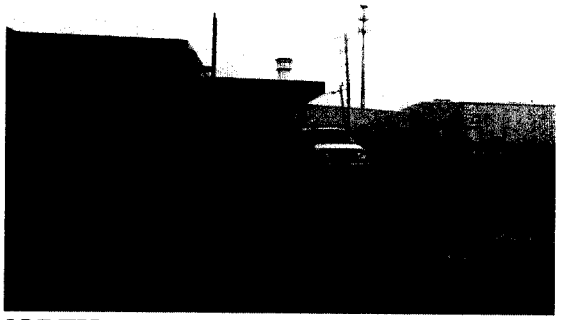
Fire Station #7 Site
11545 S. Memorial Parkway
Huntsville, Alabama 35803
Madison County

AQS Site ID: 01-089-0004
Latitude: 34.620278
Longitude: -86.566389



AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM-10	M	S	High Concentration	H	6	Y	6/28/1990	Active	



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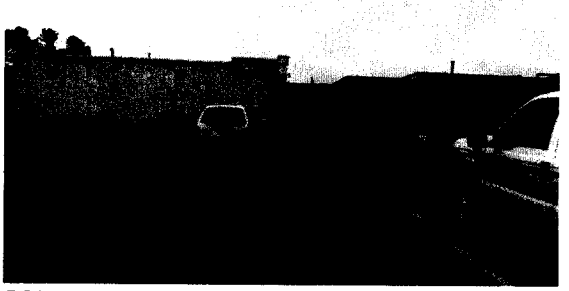

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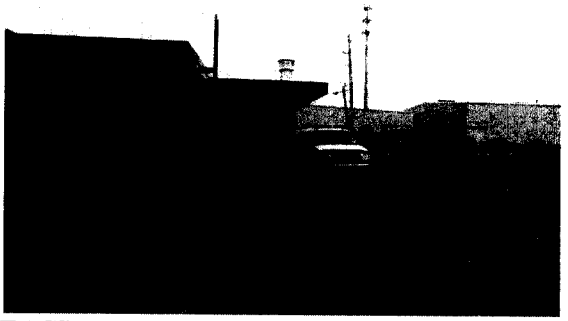

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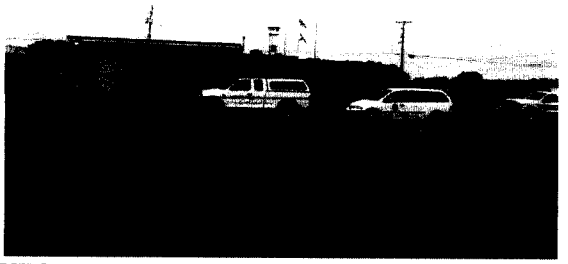


WEST

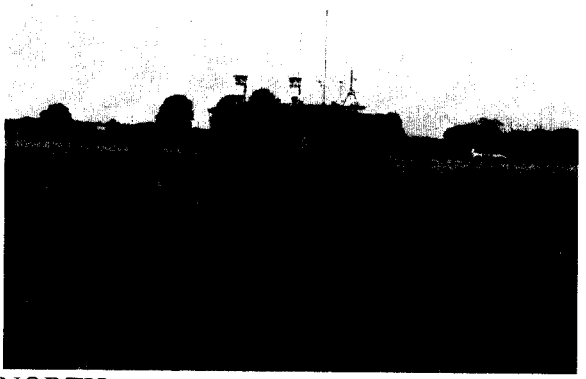
Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor From roadway (nearest pavement)	Type of ground Cover Around site	Probe material
PM-10	N/A	4.3m	83.8m	77.7m	30.5m	Asphalt Grass	N/A

Old Airport Site
2201 John Hunt Park
Huntsville, Alabama 35805
Madison County

AQS Site ID: 01-089-0014
Latitude: 34.68767
Longitude: -86.58637

AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
PM-10	U	S	Population	H	3	Y	7/01/1988	Active	
PM-10	U	S	Population	H	6	Y	7/01/1988	Active	Collocated
PM 2.5	U	S	Population	L	3	Y	1/01/1999	Active	
PM 2.5	U	S	Population	L	6	Y	1/01/1999	Active	Collocated
PM 2.5	U	S	Population	L		N	10/9/2003	Active	Continuous
Ozone	U	S	Population	UV		Y	1/01/1975	Active	Continuous



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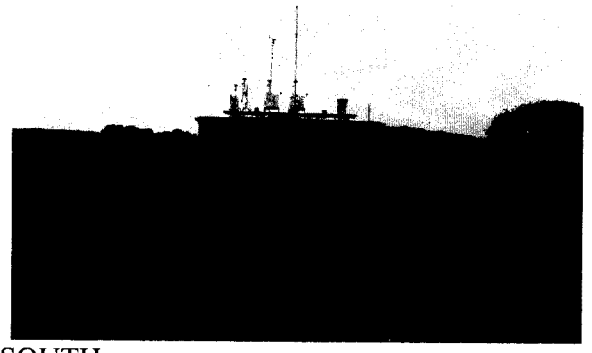

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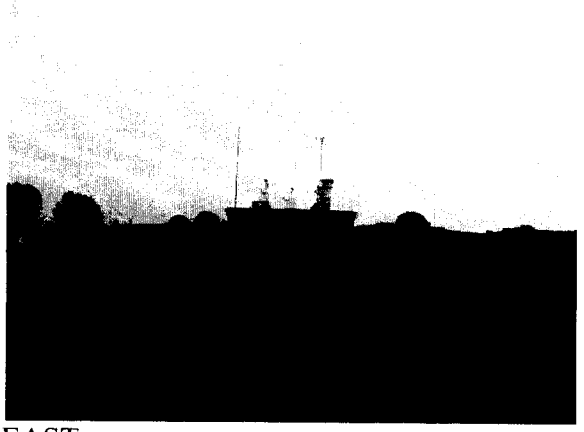


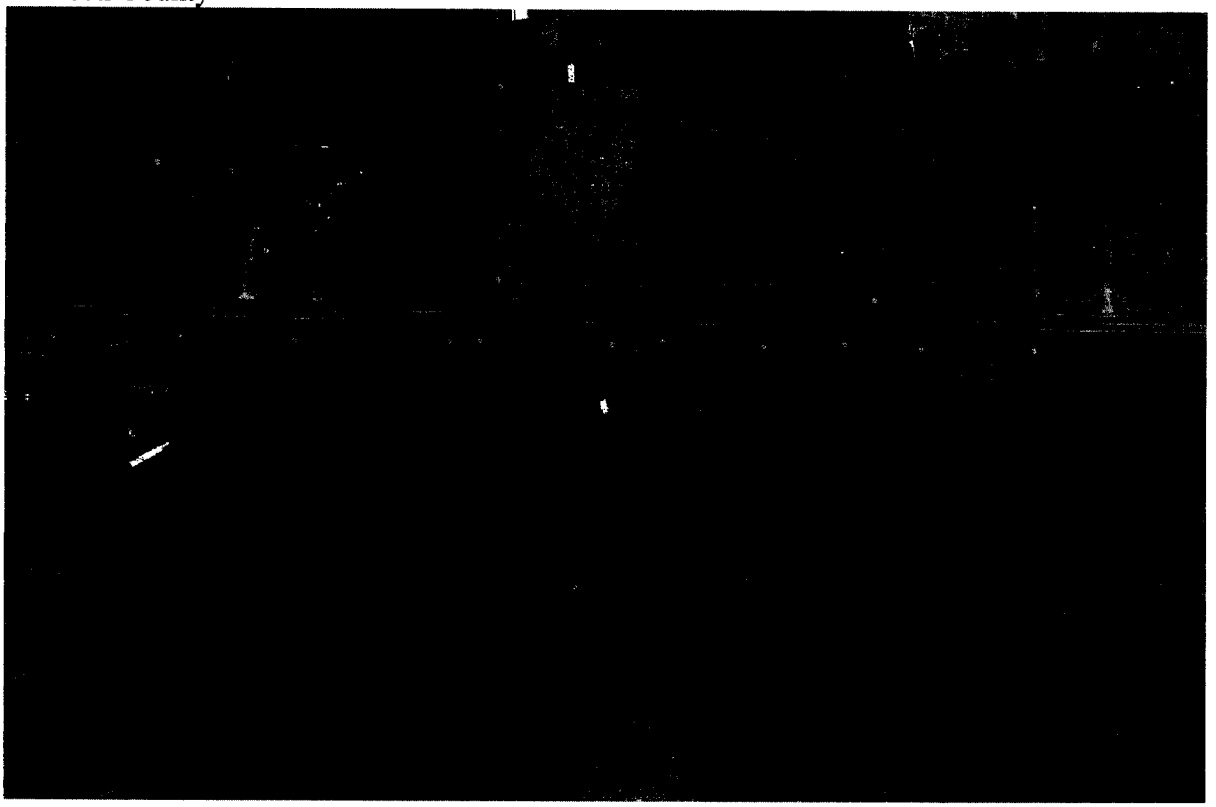
EAST

WEST

Monitor	Distance between collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor From roadway (nearest pavement)	Type of ground Cover Around site	Probe material
PM-10		4.3m	30.5m	24.4m	91m	Grass, Asphalt	N/A
PM-10	2m	4.3m	30.5m	24.4m	91m	Grass, Asphalt	N/A
R&P 2.5		4.3m	30.5m	24.4m	91m	Grass, Asphalt	N/A
R&P 2.5	2m	4.3m	30.5m	24.4m	91m	Grass, Asphalt	N/A
TEOM		4.5m	30.5m	24.4m	91m	Grass, Asphalt	Teflon
T400		4.5m	30.5m	24.4m	91m	Grass, Asphalt	Teflon

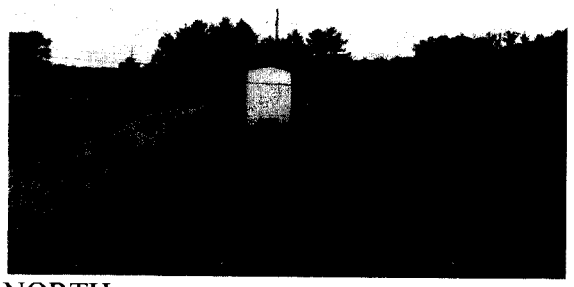
Capshaw Road Site
1130 Capshaw Road
Huntsville, Alabama 35757
Madison County

AQS Site ID: 01-089-0022
Latitude: 34.772727
Longitude: -86.756174



AERIAL PHOTOGRAPH ¼ mile radius

Pollutant	Scale	Type	Monitoring Objective/CBSA	Method	Schedule	NAAQS	Date Began	Date Ended	Comment
Ozone	U	S	Population Exposure	UV		Y	7/1/2011	Active	Continuous



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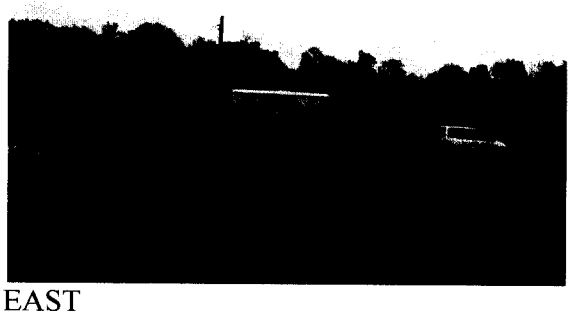

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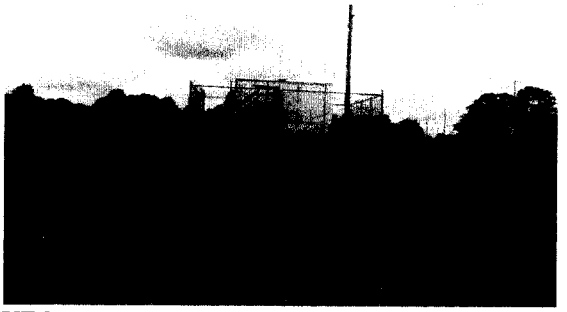


WEST

Monitor	Distance Between Collocated inlets	Height of inlet	Distance of probe or inlet from trees	Distance of probe or inlet from dripline of trees	Distance of probe or monitor From roadway (nearest pavement)	Type of ground Cover Around site	Probe Material
T400	N/A	4.0m	48.8m	45.7m	30m	Grass, Ag Field	Teflon

Network Review Findings

The existing network as summarized in the attached Air Monitoring Network Description complies with 40 CFR Part 58 requirements.

AIR MONITORING NETWORK DESCRIPTION

(As of April 2016)

Site ID	Pollutant(s) Monitored	Methodology	Operating Schedule	Monitoring Objective	Spatial Scale	MSA Represented	Site/Monitor Type	Begin Sampling	End Sampling
01-089-0002 Pulaski Pike	PM10*	SSI Hi – Vol	6 – Day	Population	Neighborhood	Huntsville	SLAMS	01/01/91	Active
01-089-0003 Downtown Garage	PM10	SSI Hi – Vol	Weekday	Population	Neighborhood	Huntsville	SPM Non-Regulatory	04/01/93	Active
01-089-0004 South Parkway	PM10*	SSI Hi – Vol	6 – Day	High Conc.	Middle	Huntsville	SLAMS	06/28/90	Active
01-089-0014 Huntsville Old Airport Road	PM10*	SSI Hi – Vol	6 – Day	Population	Urban	Huntsville	SLAMS	07/01/88	Active
	PM2.5*	SSI Lo – Vol	3 -- Day	Population	Urban	Huntsville	SLAMS	01/01/99	Active
	PM2.5	SSI Lo – Vol	Continuous	Population	Urban	Huntsville	SPM Non-Regulatory	10/09/03	Active
	Ozone*	UV Photometric	Continuous	Population	Neighborhood	Huntsville	SLAMS	01/01/75	Active
01-089-0022 Capshaw	Ozone*	UV Photometric	Continuous	High Conc.	Urban	Huntsville	SLAMS	07/01/11	Active

*Sites used for NAAQS comparison.

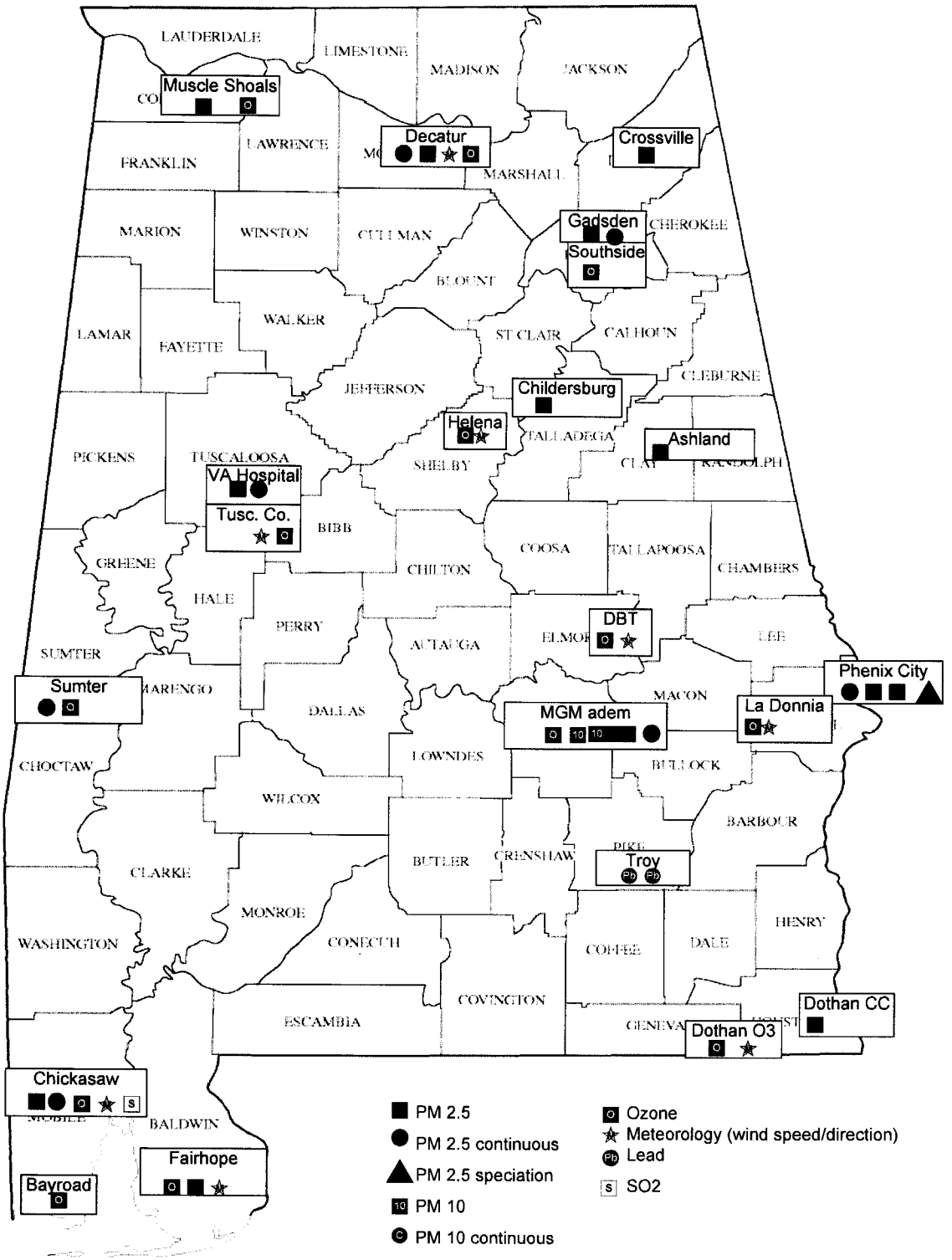
Site ID	Location	Geographical Coordinate	Three Closest Roads	Proposed Changes

01-089-0002 Pulaski Pike	5006 Pulaski Pike Huntsville, AL 35810	Latitude +34.788333 Longitude -86.616111	Pulaski Pike Stag Run Winchester Road	None Proposed
01-089-0003 Downtown Garage	Madison St. – Garage Huntsville, AL 35801	Latitude +34.728740 Longitude -86.585010	Madison Street Gates Street Fountain Circle	None Proposed
01-089-0004 South Parkway	11525 S. Memorial Pkwy Huntsville, AL 35803	Latitude +34.620278 Longitude -86.566389	South Memorial Parkway Redstone Road Hobbs Road	None Proposed
01-089-0014 Airport Road	Old Airport – Airport Rd. Huntsville, AL 35802	Latitude +34.687670 Longitude -86.586370	Airport Road Memorial Parkway Leeman Ferry Road	None Proposed
01-089-0022 Capshaw	1130 Capshaw Road Huntsville, AL 35757	Latitude +34.772727 Longitude -86.756174	Capshaw Road Wall Triana Highway Balch Road	None Proposed

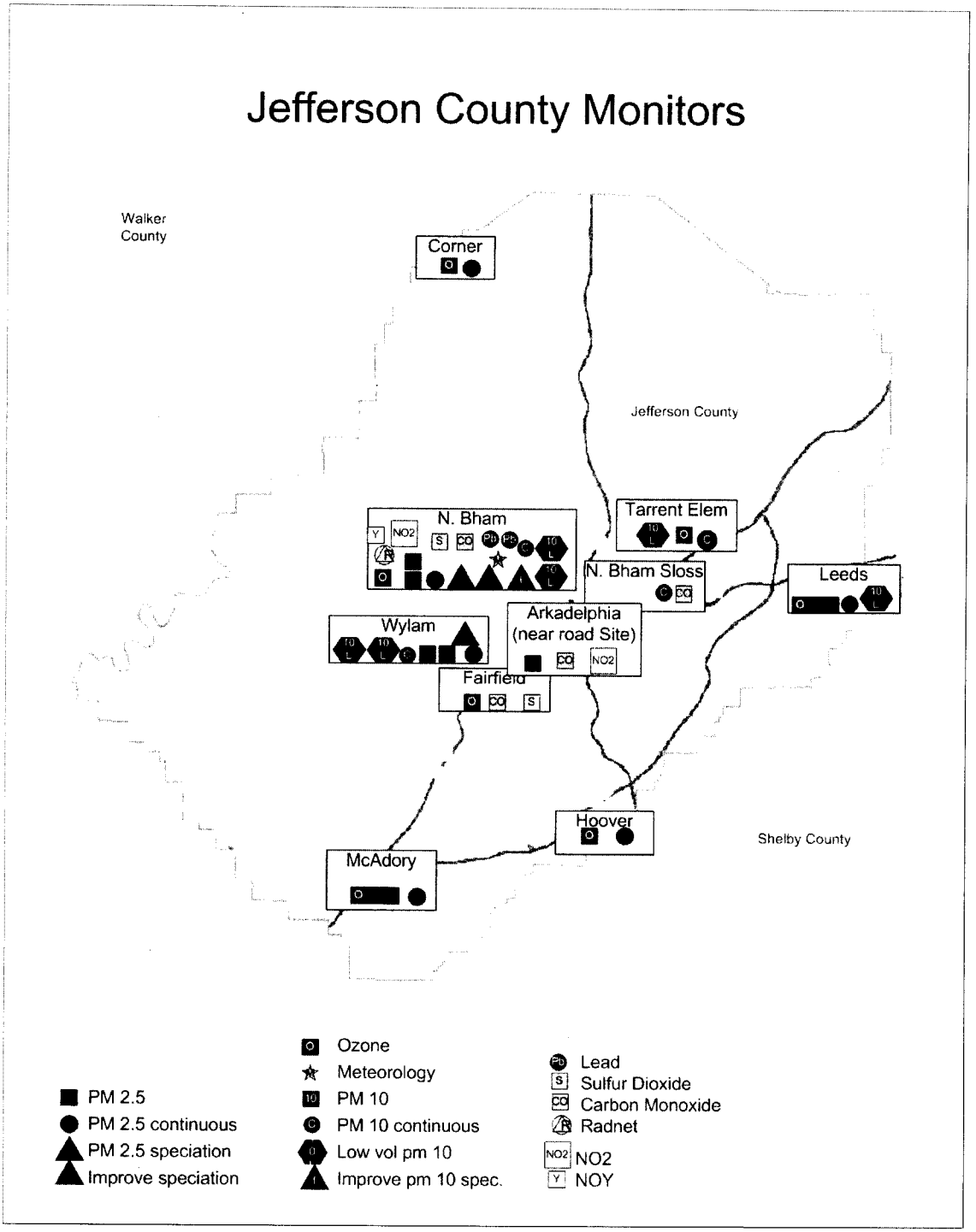
APPENDIX C

Maps

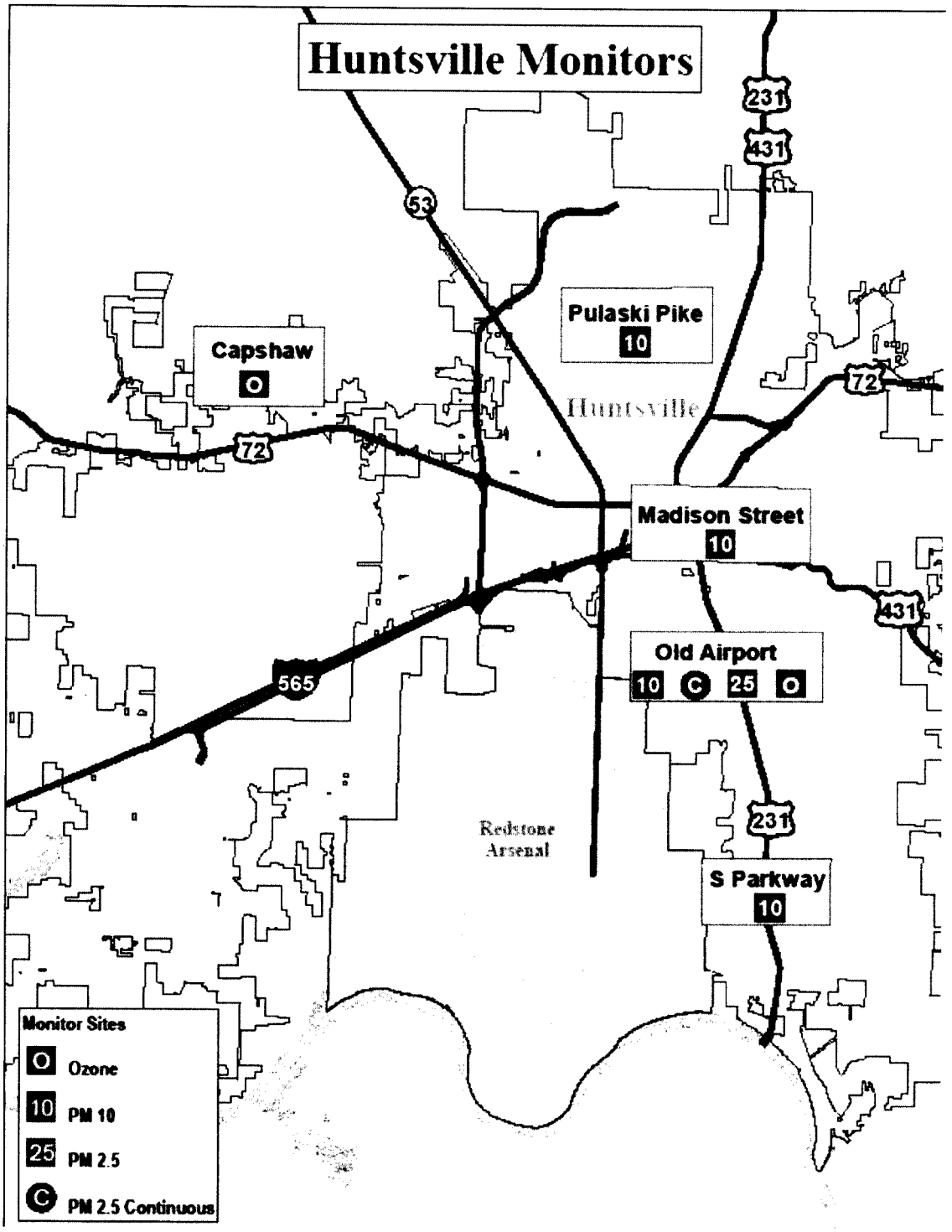
ADEM Monitoring Sites



Jefferson County



City of Huntsville



APPENDIX D

Site Selection for DRR Monitoring Near the Lhoist – Montevallo, Alabama Location

The ADEM Air Division has reviewed modeling associated with the Lhoist-Montevallo facility for the placement of a SO_2 monitor to support compliance with the 1-hour SO_2 NAAQS. The modeling followed recommendations outlined in EPA's Modeling Technical Assistance Document (TAD). The ADEM Air Division agrees that the modeling was performed consistent with the TAD.

In addition, the Air Assessment Unit visited the facility to determine if the proposed sites would meet 40 CFR 58, Appendix E probe siting criteria. Two sites were identified in the submitted report, the Hwy 25 site and the LNA east site. The Hwy 25 site was selected as the preferred site due to logistics and other factors stated in the modeling report.

Site Visits

ADEM visited the LNA east site and confirmed that access and security would be major issues with the site. In addition, the modeled receptors which showed higher concentrations would be located on a fairly steep ridge.

ADEM found that both sites are covered in mature trees.

Obstacles

ADEM visited the Hwy 25 site and determined that the tallest tree is approximately 60 to 70 feet tall. These trees would act as an obstruction to the air flow. Lhoist has committed to remove any trees that would be considered obstacles. Access to the site would be via an existing driveway off of Highway 25 on the neighbor's property. Two of the trees of concern were on this neighbor's property but the Lhoist representative felt this could be resolved during the easement negotiations.

Minor Sources

The Hwy 25 site is located across the street from a shop which performs welding activities. The shop is approximately 70 meters from the site. It does not appear that this would be a significant source of SO_2. Also, there is a natural gas pipeline approximately 125 meters to the northeast of the site. The reduced sulfur emissions from this source should not interfere with the measurement of SO_2.

The Hwy25 site appears to be an acceptable location for the monitoring site. Below is a report of modeling which was performed to inform the placement of an ambient air SO_2 monitor.

[redacted]

SO_2 MODELING TO SUPPORT AMBIENT MONITOR PLACEMENT

Lhoist North America of Alabama, LLC > Montevallo Plant

Lhoist North America
Lhoist Group

Prepared By:

TRINITY CONSULTANTS
3495 Piedmont Road
Building 10, Suite 905
Atlanta, GA 30305
(678) 441-9977

March 2016

Project 151101.0120

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1. INTRODUCTION

1.1. PURPOSE

Lhoist North America (LNA) has selected the option of monitoring under the SO_2 Data Requirements Rule (DRR) for establishing the attainment designation of the area surrounding the LNA facility, located near the town of Calera, Shelby County, Alabama. This site is referred to within this report as the Montevallo facility.

Adequate monitor placement is an important part of a monitoring program and is commonly aided by execution of modeling studies. The goal of this modeling study was to determine the location to best site a single ambient air monitor for SO_2 under the DRR. This document describes the procedures that were conducted in the air dispersion modeling study, aiming to evaluate the 1-hour concentration patterns of sulfur dioxide (SO_2) in the near field surrounding the facility, to assist in justification for the proposed ambient air monitor location.

To the extent possible, the modeling procedures used in assistance for siting the SO_2 ambient monitor were consistent with the applicable guidance documents, including the February 2016 Draft "SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document" (TAD) issued by the United States Environmental Protection Agency (USEPA).[1] The modeling approach is also consistent with the requirements of the final Data Requirements Rule (DDR) for the 2010 1-hour SO_2 primary NAAQS (80 FR 51052, August 21, 2015).

The current version of the TAD references other USEPA modeling guidance documents, including the following clarification memos (1) the August 23, 2010 "Applicability of Appendix W Modeling Guidance for the 1-hour SO_2 NAAQS" and (2) the March 1, 2011 "Additional Clarification Regarding Application W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard" (hereafter referred to as the "additional clarification memo"). In the March 1, 2011 clarification memo, USEPA declares that the memo applies equally to the 1-hour SO_2 NAAQS even though it was prepared primarily for the 1-hour NO_2 NAAQS.

The current actual emission rates of the five facility SO_2 sources evaluated were not used in the modeling, but rather scaled proportionally. Proportional normalization procedure does not disturb the modeling results, because chemical transformations were not evoked. Hence, the concentration distribution pattern would not depend on the magnitude of the emission rates, but more so on the relative proportion of the emission rates from each source. The peak impact area is still defined in the same way as if actual emissions from the unit were modeled. Procedures used in the modeling evaluation were those procedures described in the Monitoring TAD as referenced above.

Attached to this report is a CD (Appendix A) containing all electronic modeling files and support documents as discussed within this report. Appendix B to this report includes a letter, as provided by Argos, which specifies that LNA will not be permitted access to Argos properties for locating an SO_2 ambient monitor.

1.2. FACILITY DESCRIPTION

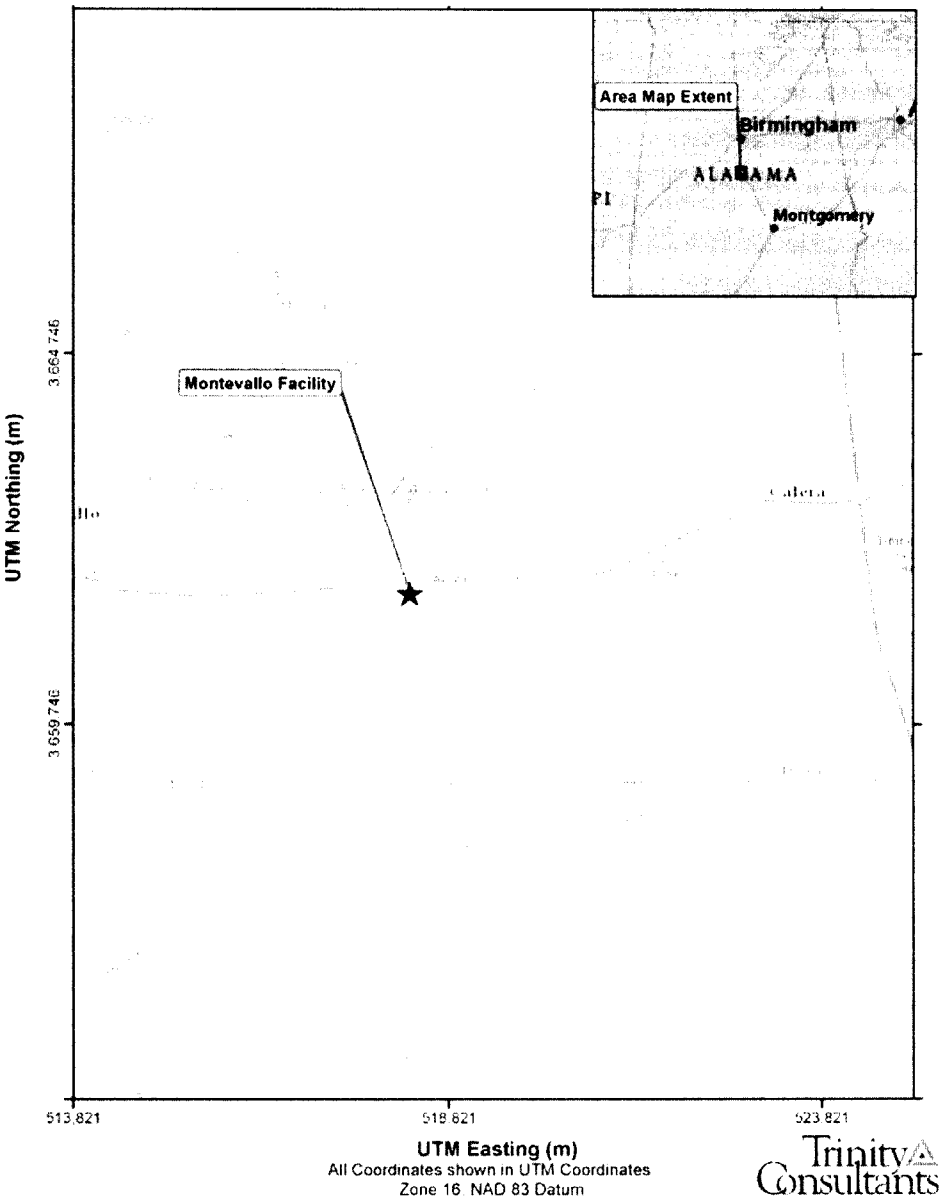
The Montevallo Plant is bordered by Highway 25 to the north, and is located approximately 5 kilometers (km) west of the town of Calera, Alabama and 5 km east of the town of Montevallo, Alabama, as shown on Figure 1-1. The facility is located in an industrial zone of a rural type area in gentle rolling terrain. The facility currently

[1] The referenced TAD has only been released in draft format, and is not expected to be updated per comments from EPA OAQPS. The Monitoring TAD includes a section on the recommended procedures for the use of modeling to inform monitor placement.

operates four (4) lime kilns and a rotary dryer which are reported as sources of SO_2 emissions. The facility has elected the monitoring option to demonstrate compliance with the NAAQS under the SO_2 DRR.

Shelby County is presently designated as "maintenance", "attainment", or "unclassifiable" for all criteria pollutants with respect to the NAAQS.[2]

Figure 1-1. Project Area Map



[2] 40 CFR 81.301 (http://www3.epa.gov/airquality/greenbook/phistory_al.html)

2. MODEL SELECTION AND METHODOLOGY

2.1. SELECTION OF MODEL

AERMOD version 15181 was used in this modeling study. AERMOD is the USEPA guideline model for short-range transport and has the ability to account for the source types and the dispersion environment, required for the modeling analysis of the Montevallo facility. AERMOD is appropriate for use for many different types of dispersion environments including: sources subject to building downwash and sources located in flat or elevated terrain.

Based on USEPA guidance provided in the TAD, all stacks were modeled with their actual physical stack height.[3] In addition, the USEPA's Building Profile Input Program (BPIP-Version 04274) version that is appropriate for use with PRIME algorithms in AERMOD was used to incorporate downwash effects in the model for all modeled point sources. The building dimensions of each structure were used as an input to the BPIPPRM program to determine direction specific building data. PRIME addresses the entire structure of the wake, from the cavity immediately downwind of the building to the far wake.

The AERMOD modeling system is composed of three modular components: AERMAP, the terrain preprocessor; AERMET, the meteorological preprocessor; and AERMOD, the dispersion module. AERMAP is used to extract terrain elevations for selected model objects – emission sources, buildings and receptor points – and to generate the receptor hill heights that are used by AERMOD to drive advanced terrain processing algorithms. National Elevation Database (NED) data available from the USGS are utilized to interpolate surveyed elevations onto user-specified model objects in the absence of more accurate site-specific elevation data.

AERMET generates separate surface file and vertical profile file to pass meteorological observations and turbulence parameters to AERMOD. AERMET meteorological data are refined for a particular analysis based on the choice of micrometeorological parameters that are linked to the land use and land cover (LULC) around the particular facility and/or meteorological site. AERMET combines raw surface and upper air observation to create a complete AERMOD-ready meteorological data set. Wind observations are enhanced by including 1-minute ASOS wind observation, which are processed be the AERMINUTE preprocessor.

AERSURFACE is the land-use preprocessor which is used to determine the surface parameters set characterizing the particular domain.

In this modeling study, AERMOD and all associated pre-processors were used with their current regulatory default options.

2.2. METEOROLOGICAL DATA

Site-specific dispersion models including AERMOD require a sequential hourly record of atmospheric characteristics representative of the region within which the source is located. In the absence of site-specific measurements, the EPA guidelines recommend the use of readily available data from the closest and most representative National Weather Service (NWS) station.

[3] All facility sources are within their determined Good Engineering Practices (GEP) stack height, so modeling of actual stack heights has no impact on the analysis.

The project site does not maintain on-site meteorological records. Therefore, data was compiled from the Shelby county airport surface station (KEET) for the latest complete set of 5-year observations, namely 2010 to 2014, as recommended in the *SO_2 NAAQS Designations Modeling Technical Assistance Document*, issued by the U.S. EPA, in February, 2016. The AERMOD ready surface and profile files were compiled by ADEM for use in this study.

The meteorological data necessary for the dispersion modeling were processed with the latest versions of AERMET and the ancillary utilities AERSURFACE and AERMINUTE.[4]

2.2.1. Surface Data

The closest surface station to the project site is the Shelby County Airport (KEET), near Calera, AL. The airport is located approximately 10km to the north of the project site at latitude 33.178°N, longitude 86.782°W, and elevation 178 meters above mean sea level. The 2010-2014 surface records for KEET were obtained from the National Center for Environmental Information (NCEI, formerly NCDC), as provided by ADEM. Table 2-1 summarizes the data coverage during the modeling period for the combined surface and upper air stations as reported by AERMOD.

Table 2-1. AERMOD Meteorological Data Coverage

KEET + BMX	2010		2011		2012		2013		2014	
	# of Hours	%	# of Hours	%	# of Hours	%	# of Hours	%	# of Hours	%
Total # Hours	8760		8760		8784		8760		8760	
Valid Hours	8451	96.47	8605	98.23	8671	98.71	8661	98.87	8587	98.03
Calm	1492	17.65	1254	14.57	1425	14.25	1999	23.08	479	5.58
Missing	309	3.53	155	1.77	113	1.29	99	1.13	173	1.97

2.2.2. Upper Air Data

Twice-daily upper air observations from the nearest upper air stations – the Birmingham station (KBMX or BMX) located near the Shelby County Airport, Alabaster AL – were used to calculate the vertical temperature gradient for AERMET. The BMX upper air station is located approximately 10 km north of the facility at coordinates 33.172N, 86.770W.

2.2.3. Surface Parameters

AERMET requires specification of site characteristics including surface roughness (z_0), albedo (r), and Bowen ratio (Bo). These parameters were developed by ADEM and best describe the location of the surface station. Since Bowen Ratio varies depending on the soil moisture content, the EPA recommended method was used to determine the applicable Bowen Ratio moisture categories for each year. For the Shelby County Airport, it was determined:

- 2010 and 2011 were in the "Dry" category
- 2012 was in the "Average" category
- 2013 and 2014 were in the "Wet" category.

[4] Shelby County Airport (KEET) 2010-2014 meteorological data as provided by Mr. Michael Leach of ADEM via e-mail to Mr. Justin Fickas of Trinity on October 30, 2015.

2.2.4. Dispersion Environment

The application of AERMOD requires characterization of the local (within 3 kilometers) dispersion environment as either urban or rural, based on a USEPA-recommended procedure (commonly referred to as the Auer Method) that characterizes an area by prevalent land use. This land use approach classifies an area according to 12 land use types. In this scheme, areas of industrial, commercial, and compact residential land characteristics are designated urban. According to USEPA modeling guidelines, if more than 50% of an area within a 3-km radius of the facility is classified as rural, then rural dispersion coefficients are to be used in the dispersion modeling analysis. Conversely, if more than 50% of the area is urban, then the area can be classified as urban.

As per *August Auer, 1978*[5] guidance, a 6-by-6 km domain centered at the project facility (creating a 3 km distance in each direction from the project location) was considered for the land-use analysis. AERSURFACE (v.13016) was used for the extraction of the land-use values in the domain. The domain was centered at the facility site and the study radius was set to 3km; the original land-use map for this extraction was obtained from USGS by-state archive. The Alabama land-use map has grid resolution of 30-meters and distinguishes 21 land-use categories per 1992 classification. The resulting land-use count and percentages are summarized in Table 2-2 and the domain is shown in Figure 2-1.

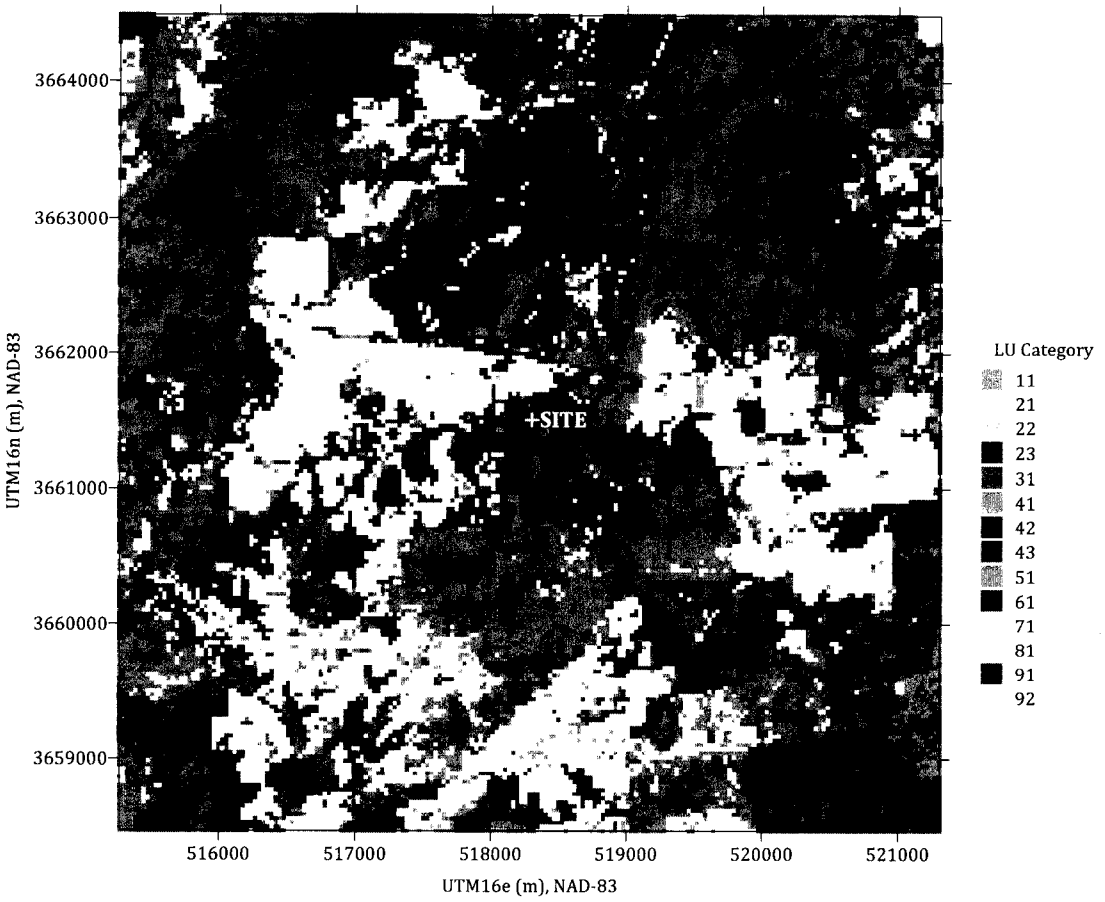
Table 2-2. Land-Use Categories Summary

LULC CAT	Land Category Description	Number of Grid Cells	Frequency (%)	Dispersion Class
11	Open Water	227	0.722	Rural
12	Perennial Ice/Snow	0	0	Rural
21	Low Intensity Residential	51	0.162	Rural
22	High Intensity Residential	3	0.010	Urban
23	Commercial/Industrial/Transp.	177	0.563	Urban
31	Bare Rock/Sand/Clay	0	0	Rural
32	Quarries/Strip Mines/Gravel	3545	11.283	Rural
33	Transitional	184	0.586	Rural
41	Deciduous Forest	5475	17.425	Rural
42	Evergreen Forest	4127	13.135	Rural
43	Mixed Forest	8513	27.094	Rural
51	Shrubland	0	0	Rural
61	Orchards/Vineyard/Other	0	0	Rural
71	Grasslands/Herbaceous	0	0	Rural
81	Pasture/Hay	6518	20.745	Rural
82	Row Crops	2379	7.572	Rural
83	Small Grains	0	0	Rural
84	Fallow	0	0	Rural
85	Urban/Recreational Grasses	150	0.477	Rural
91	Woody Wetlands	71	0.226	Rural
92	Emergent Herbaceous Wetlands	0	0.000	Rural
	TOTAL	31420		
	Rural		99.427	
	Urban		0.573	

[5] "Air Quality Modeling Guidelines", February 1999, Section 5

This summary was generated by AERSURFACE and stored in the run's log file. Additionally, the 21-categories were evaluated according to the *Guidelines* in terms of dispersion classes as being of URBAN or RURAL. The domain is covered more than 99% by rural land features and therefore the selected AERMOD modeling option was rural.

Figure 2-1. Land Cover Map of the 6-by-6 km Domain, Centered at the Facility



	1992 Land Use Categories Classification		
11	Open Water	43	Mixed Forest
12	Perennial Ice/Snow	51	Shrubland
21	Low Intensity Residential	61	Orchards/Vineyard/Other
22	High Intensity Residential	71	Grasslands/Herbaceous
23	Commercial/Industrial/Transp	81	Pasture/Hay
31	Bare Rock/Sand/Clay	82	Row Crops
32	Quarries/Strip Mines/Gravel	83	Small Grains
33	Transitional	84	Fallow
41	Deciduous Forest	85	Urban/Recreational Grasses
42	Evergreen Forest	91	Woody Wetlands
		92	Emergent Herbaceous Wetlands

2.3. RECEPTOR GRID COORDINATE SYSTEM

For this modeling analysis the Universal Transversal Mercator (UTM) coordinate system was selected in zone 16 and the datum is NAD-83. The location of all emission sources, structure, and receptors are represented with coordinates from this system.

In this analysis a near field dense receptor grid was utilized. The grid extends approximately 1 km off the facility fence line in all directions. The fence line, which determines the ambient air boundary, was covered with receptors 10 or less meters spaced. Beyond the fence line, the extent of the grid is sufficient to resolve the maximum impact areas in the near field around the facility, and is appropriate for determining the proper location for ambient air monitoring system. The grid spacing is 10 meters. No receptors were placed within the facility fence line. Figure 2-2 shows the extent of the modeling domain and the receptor grid over an aerial image. [6]

Figure 2-2. Modeling Receptors and Domain Map

[6] The ambient air boundary shown in Figure 2-2 represents the current fenceline line of the Montevallo facility, and also includes fenceline additions which would be in place as part of an ongoing facility project (yellow LNA boundary).

In addition receptors were excluded from the Argos Cement LLC (Argos) properties north of LNA and on the sections of roads and railroads between the excluded parcels.[7] Such areas were excluded because of inaccessibility due to ownership or being inappropriate locations for placing an ambient air monitor. An area on the northwestern side of the LNA fenceline, between the fence and road, was excluded from the analysis as there is a man-made terrain feature in this area which would make siting of a monitor difficult, and the area is in close proximity to Highway 25. In other modeling areas, receptors are kept on roads and structures only to help more accurately resolve the peak impacts areas. No on-road or building locations were considered in the refined analysis for the actual monitor placement.[8]

Receptor elevations and hill heights required by AERMOD were determined using the AERMAP terrain preprocessor (version 11103). Facility building and source elevations were also estimated with AERMAP. All terrain elevations were extracted from the 1 arc-second National Elevation Dataset (NED) maps provided by the United States Geographical Survey (USGS).

2.4. MODELED EMISSION SOURCES

2.4.1. Representation of Emission Sources

The AERMOD dispersion model allows for emissions units to be represented as point, area, or volume sources. In this study the sources were determined to be of the point type. The lime kiln stacks have unobstructed vertical air flow therefore they were modeled with their actual exit velocity; the rotary kiln stack has and rain cap installed on its tip, therefore the gas exit velocity was set to 0.001m/s. The emission points were represented with their actual stack heights, gas exit velocities and diameters as recommended in the SO_2 monitoring TAD, and all 5 sources evaluated are subject to downwash. Source parameters are listed in Table 2-3.

Table 2-3. Modeling Parameters of Project Emission Sources

Model ID	Description	UTM16 East (m)	UTM16 North (m)	Elev. (m)	SO_2 Rate (g/s)	Height (m)	Temp. (K)	Velocity (m/s)	Diam.
CA01K	Kiln 1 East	518,299	3,661,543	151.28	2.52e-2	22.56	324.82	5.15	1.92
CA01L	Kiln 1 West	518,295	3,661,541	151.17	2.52e-2	22.56	324.82	5.15	1.92
CA02	Kiln 2	518,310	3,661,525	150.91	4.41e-2	28.96	324.82	9.14	2.13
CA03	Kilns 3 & 4	518,394	3,661,476	152.03	9.44e-1	45.72	505.37	20.54	3.23
PS03	Rotary Dryer	518,176	3,661,457	148.08	4.20e-6	11.43	422.04	0.001	0.61

As previously stated the SO_2 emission rates were normalized and are consistent in their distribution with CY2014 emissions reported as part of the Montevallo facility's annual emissions inventory.

[7] Argos property boundaries were obtained from Shelby County, Alabama available GIS information (http://maps.shelbyal.com/). The Argos properties were the only non-LNA property area excluded from the modeling analysis.

[8] A letter, received from Argos indicating that an ambient SO_2 monitor would not be allowed on their property, is included within Appendix B of this report.

2.4.2. GEP Stack Height Analysis

The U.S. EPA has promulgated stack height regulations that restrict the use of stack heights in excess of "Good Engineering Practice" (GEP) in air dispersion modeling analyses. Under these regulations, that portion of a stack in excess of the GEP height is generally not creditable when modeling to determine source impacts. This essentially prevents the use of excessively tall stacks to reduce ground-level pollutant concentrations.

This equation is limited to stacks located within 5L of a structure. Stacks located at a distance greater than 5L are not subject to the wake effects of the structure. 5L is defined as five times the lesser of the height or maximum projected width of a nearby structure or terrain feature. The wind direction-specific downwash dimensions and the dominant downwash structures used in this analysis are determined using BPIP. In general, the lowest GEP stack height for any source is 65 meters by default.[9] An evaluation has indicated that none of the emission units stacks evaluated exceed GEP height. Therefore, there should be no concern regarding consideration of actual stack heights.

2.4.3. Building Downwash Analysis

The emission units at the Montevallo Plant were evaluated in terms of their proximity to nearby structures. The purpose of this evaluation is to determine if stack discharges might become caught in the turbulent wakes of these structures leading to downwash of the plumes. Wind blowing around a building creates zones of turbulence that are greater than if the building were absent.

The direction-specific building dimensions used as input to the AERMOD model were calculated using the U.S. EPA sanctioned Building Profile Input Program, PRIME version (BPIP PRIME), version 04274, as incorporated in the *BREEZE®AERMOD Pro* software, developed by Trinity. BPIP PRIME is designed to incorporate the concepts and procedures expressed in the GEP Technical Support document, the Building Downwash Guidance document, and other related documents.[10]

Figure 2-3 shows the building and stack layout as entered in to the modeling. All five stacks included in the modeling were found to be a subject of downwash. Table 2-4, Table 2-5, and Table 2-6 list the buildings and their relevant modeling characteristics.

[9] 40 CFR 51.100(ii)

[10] U.S. EPA, Office of Air Quality Planning and Standards, Guidelines for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations) (Revised), Research Triangle Park, North Carolina, EPA 450/4-80-023R, June 1985.

Figure 2-3. Building and Source Layout

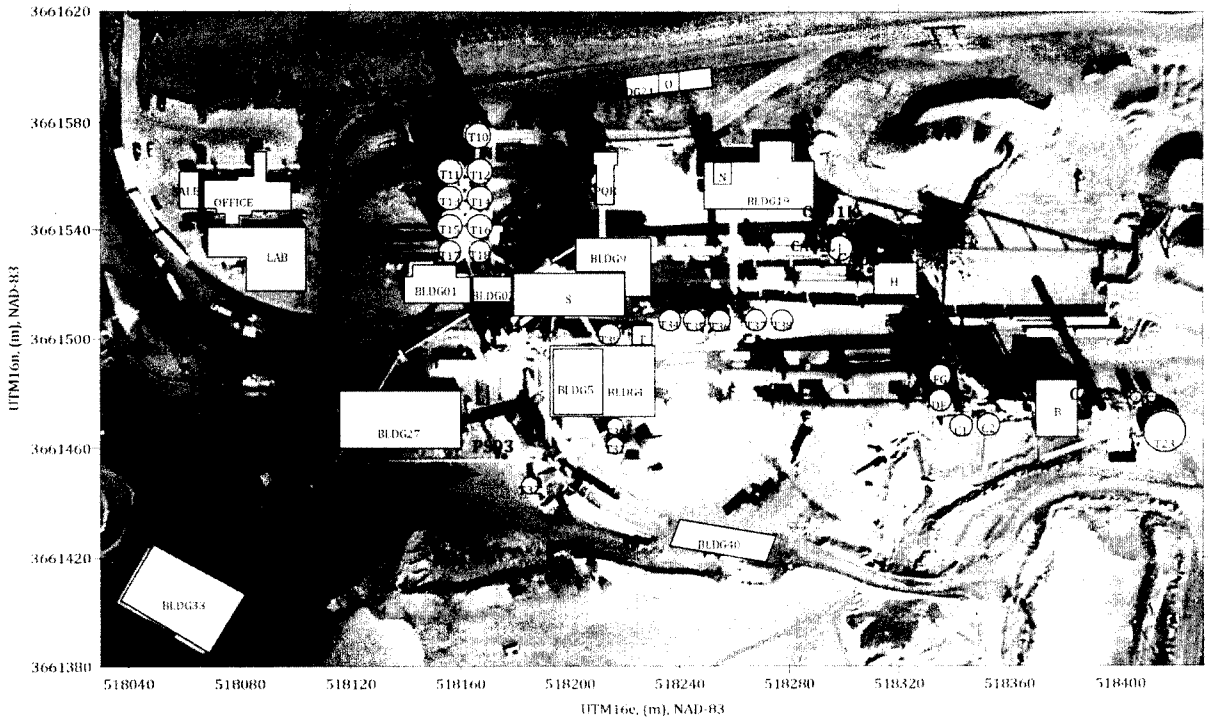


Table 2-4. List of Rectangular Buildings Included in the Downwash Analysis

Rectangular Building ID	Description	SWC* UTM16e (m)	SWC* UTM16n (m)	Height (m)	Easting Dimension (m)	Northing Dimension (m)
BLDG02	Lower Bagging	518,165	3,661,514	13.69	14.00	9.00
SALES	Administration Building	518,059	3,661,548	3.05	7.00	14.00
S	Limehouse	518,180	3,661,509	27.15	40.30	15.40
BLDG21	FK Loadout lower roof	518,221	3,661,589	6.10	31.41	6.84
O	Flex Kiln Loadout	518,233	3,661,591	12.77	7.53	7.00
N	Bagging Bin	518,253	3,661,558	14.88	6.50	8.10
H	K2 Scrubber Building	518,311	3,661,516	19.75	15.50	11.40
B	K3/4 Baghouse	518,370	3,661,464	17.18	15.00	21.00
BLDG4	Milling Bldg.	518,193	3,661,471	20.30	38.20	25.90
BLDG5	Kiln 3/4 Burner Bldg.	518,194	3,661,472	20.48	18.10	23.80
BLDG27	Storeroom	518,116	3,661,460	6.61	44.00	21.00
T	Mag Tower	518,223	3,661,498	29.62	7.30	7.10
BLDG33	Coal Shed	518,037	3,661,404	11.43	37.28	24.01
BLDG26	Brick Shed	517,995	3,661,461	6.01	22.28	18.09
BLDG40	Loadout Station	518,237	3,661,424	9.14	35.51	10.38

*SCW means South West Corner

Table 2-5. List of Circular Buildings Included in the Downwash Analysis

Circular Building ID	Description	Center UTM16e (m)	Center UTM16n (m)	Height (m)	Radius (m)
T10	Bin 25 (Pulv Limestone)	518,167	3,661,575	30.72	4.60
T11	#6 USX Bin	518,156	3,661,562	22.01	4.60
T12	#5 USX Bin	518,167	3,661,562	22.01	4.60
T13	#4 USX Bin	518,156	3,661,552	22.01	4.60
T14	#3 USX Bin	518,167	3,661,552	22.01	4.60
T15	#2 USX Bin	518,156	3,661,541	22.01	4.60
T16	#1 USX Bin	518,167	3,661,541	22.01	4.60
T17	No. 7 Bin	518,156	3,661,532	18.65	4.00
T18	Scale Bin	518,167	3,661,532	18.65	4.00
J	K1 Stone Tank	518,299	3,661,533	23.37	4.60
T23	Water Treatment Clarifier	518,416	3,661,466	8.81	7.50
T25	Water Treatment Mixing Tank	518,412	3,661,479	10.24	1.96
T24	Water Treatment Retention Tank	518,406	3,661,479	10.85	1.96
C1	Dust Tank	518,343	3,661,468	29.28	4.00
C2	Dust Tank	518,353	3,661,469	29.28	4.00
T30	Kiln 3 Solid Fuel Tank	518,217	3,661,468	24.41	3.00
T31	Kiln 4 Solid Fuel Tank	518,216	3,661,461	23.81	3.00
T32	Dryer Feed Bin	518,185	3,661,447	19.42	3.00
FG	K3/K4 Stone Tanks	518,335	3,661,487	27.00	4.00
DE	K3/K4 Spray Towers	518,335	3,661,478	27.00	4.00
T34	West Screen System Baghouse	518,237	3,661,507	18.65	4.00
T35	East Screen System Baghouse	518,246	3,661,507	18.65	4.00
T36	#10 Bin Baghouse	518,255	3,661,507	18.65	4.00
T37	#17 Bin Baghouse	518,268	3,661,507	18.65	4.00
T38	#11 Bin	518,278	3,661,507	18.65	4.00
T39	#19 Dolo Bin Baghouse	518,214	3,661,502	18.65	4.00

Table 2-6. List of Polygonal Buildings Included in the Downwash Analysis

Polygonal Building ID	Description	SWC* UTM16e (m)	SWC* UTM16n (m)	Height (m)	Number of Vertices
OFFICE	Administration Building	518,067	3,661,548	4.88	18
LAB	Laboratory Building	518,069	3,661,530	4.88	6
BLDG01	Lower Bagging	518,140	3,661,513	6.98	8
BLDG9	Kiln 1/2 Burner Bldg.	518,202	3,661,525	12.44	6
PQR	Flex Kiln Screen	518,210	3,661,550	33.15	8
BLDG19	Upper Bagging	518,249	3,661,548	6.65	8

*SCW means South West Corner

3. RESULTS AND CONCLUSIONS

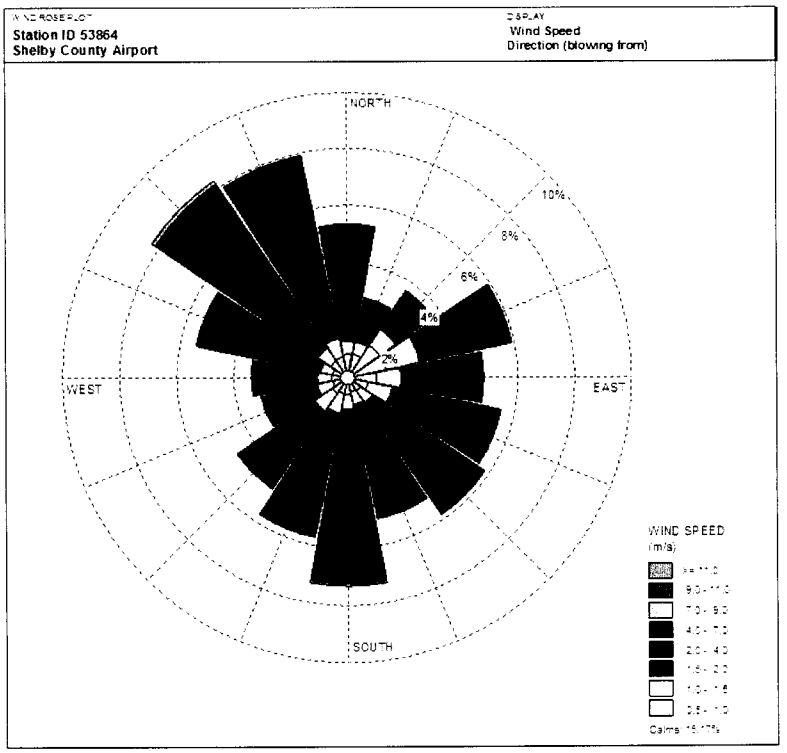
3.1. MODELING RESULTS ANALYSIS

The SO_2 1-hour concentrations were evaluated in form of the NAAQS standard, i.e. the 99th percentile was calculated for each receptor and then concentration values were averaged over the five modeling years. As recommended in the modeling *Guidelines*, the 99th percentile is best represented by the 4th highest daily-maximum 1-hour concentrations, therefore the 4th highest values at each receptor were processed to obtain the design values. As stated in the previous section the normalized emission rates were used in the modeling therefore the resulting concentrations are the Normalized Dazing Values (NDV) rather than the actual predicted concentrations, which is in agreement with recommendations published in the U.S. EPA "*SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document*".

> "*Modeling the normalized hourly SO_2 emissions allows for the calculation of normalized design values (NDV). NDVs do not indicate exceedance or compliance with the NAAQS, but provide a means to understanding the relative magnitude of ambient SO_2 concentrations across an area.*"

Air dispersion is highly dependent on the prevailing winds (Figure 3-1). The most frequent wind direction is northwest, followed by south and southeast. Northwesterly and southerly winds tend to be stronger than the ones having more easterly component. The highest probability for light wind is again from the northeast.

Figure 3-1. 5-year Wind Rose, Presenting the Prevailing Winds at KEET



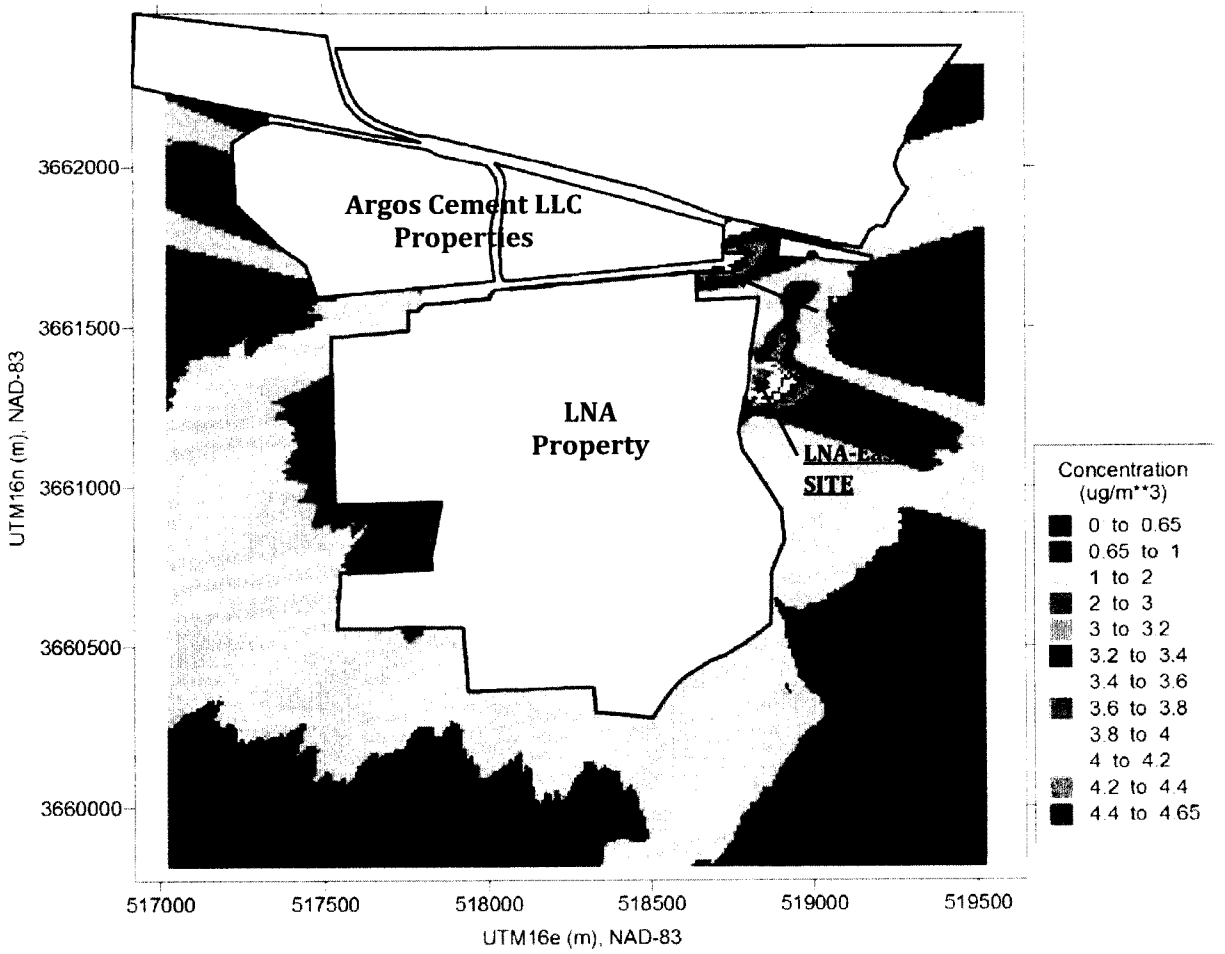
The spatial distribution of the NDVs forms a complex pattern shown on Figure 3-2, on which two areas of high impacts can be distinguished. These areas are recognized as the LNA-East site, and the Highway 25 site.

The highest NDV impact occurs near the LNA East site, but in the assessment of monitor placement the frequency of the impacts, on a H1H MAXDAILY basis, also play a major role. Frequency of impacts analysis at selected locations is provided further below. As specified above, the original modeling analysis, as reflected in Figure 3-2, is on a fine spaced receptor grid of only 10 meters spacing (see Figure 2-2).[11]

As noted previously, the Argos properties were excluded as access to those properties, to locate a monitor, was denied by Argos (see Appendix B). Although a portion of the Highway 25 site high impact area does cross the road to an adjacent property, that property is a small industrial site and would not be conducive for location of a monitor. Therefore, the further analysis focused on the sites termed LNA East, and the Highway 25 site.

[11] Corresponding model runs can be found in the AERMOD_full_grid folder on the modeling CD found in Appendix A.

Figure 3-2. Spatial Distribution of the 99th percentile 1-hour SO_2 Concentrations[12]



The additional analysis consisted of selecting and evaluating a smaller number of receptors around and including each local peak NDV concentration, which could be considered as a potential monitor location. Each cluster consisted of 5 receptor points, which were selected based on the following procedure:

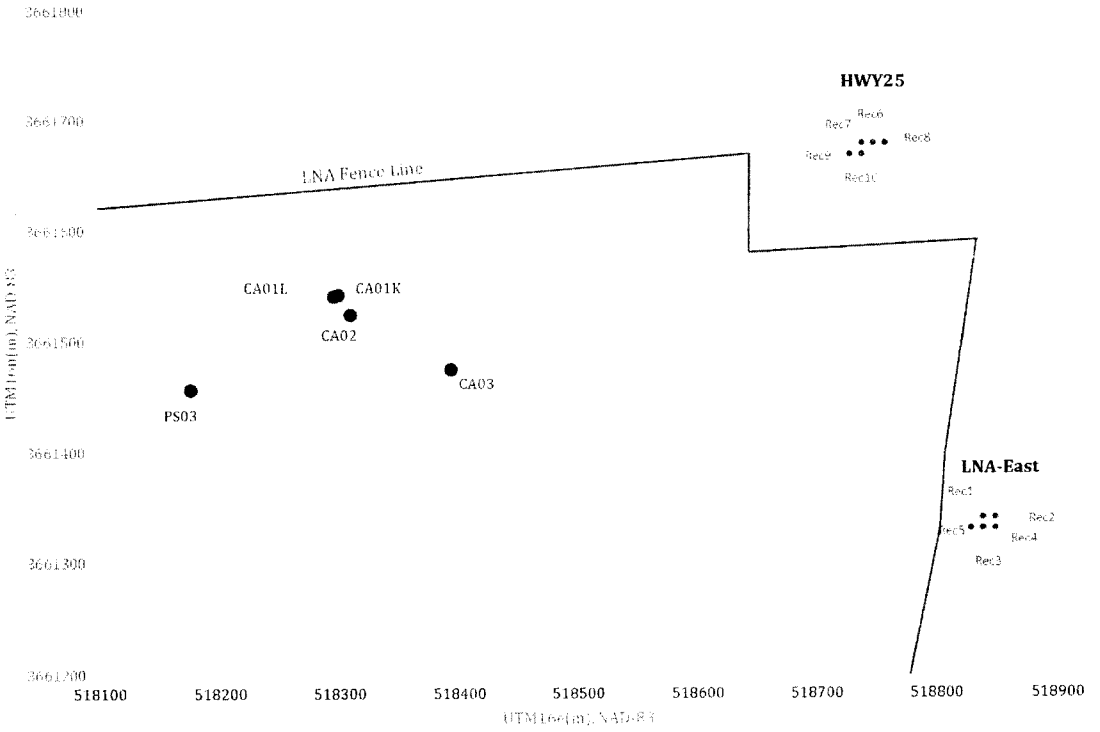
1. The receptors for each hotspot area were first extracted from the H4H (99th percentile) plot file, as provided in the AERMOD_full_grid folder on the modeling CD in Appendix A.
2. These NDVs (H4H 99th percentile values) were then ranked for each area. The top 5 maximum impact receptors (defined by NDV) were then extracted for each area.
3. A spreadsheet, including this analysis, is provided in the AERMOD_full_grid folder on the modeling CD in Appendix A. On the spreadsheet there are 3 tabs provided. One for the entire data output of the H4H plot file,

[12] Modeling input and output files which created Figure 3-2, including plot files, are included on the CD attached to this report.

one for the extracted receptors around the LNA east site, and another for the receptors extracted around the Highway 25 site.

After the two clusters of 5 receptors were selected following the procedure described above, the clusters were evaluated in two aspects – concentration magnitude (H1H maximum daily) and frequency of "hit", where "hit" is used as a term to describe the event of one receptor having the maximum hourly concentration at a particular day. To generate the frequency of occurrence of the maximum daily 1-hr impact at each receptor location, AERMOD was set to output the maximum daily 1-hr concentrations from the set of 10 receptors using the MAXDAILY output option of the model. The two clusters of receptors evaluated are shown on Figure 3-3. [13]

Figure 3-3. HWY25 and LNA East Receptor Locations Evaluated



The data from the SO2-EETa-selected.mxd output file of the model was evaluated as follows[14];

1. On the MAXDAILY tab of the SO2-EETa.mxd.xlsx Microsoft Excel file, the output data from the MAXDAILY file is reviewed.

[13] Corresponding model runs can be found in the AERMOD-selected10 folder on the modeling CD found in Appendix A. Also present within this folder is a Microsoft Excel file which contains an analysis of the MAXDAILY model output file (SO2-EETa-selected.mxd).

[14] This entire procedure is outlined in Appendix A of the EPA SO2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document (Draft February 2016), which is included on the modeling CD in Appendix A of this report.

a. Starting in cell L29, the maximum value (H1H MAXDAILY) of the 10 receptors evaluated, for that day, is determined. Then, starting in cell M29, with an Index function, the receptor corresponding with the maximum value is identified.
b. Starting in cell G3, the frequency of occurrence of the receptor in question having the MAXDAILY 1-hr impact, is determined. This data is then used to determine the overall frequency of occurrence of that receptor having the maximum impact.

The maximum daily 1-hr concentrations at each receptor in the group of 10, create a data set with relatively small standard deviation - the average over the 10 receptor maxima is 4.74 $\mu g/m^3$ and the standard deviation is 0.52, the range is [4.12 to 5.35 $\mu g/m^3$], which makes them similar from a statistical point of view. Applying a correlation analysis was not considered appropriate, because the two sites are influenced by different wind conditions. More details of the concentration distribution are presented in Table 3-1. The same table also shows the frequency of maximum impact, and it should be noted that the receptor with overall maximum concentration is not the one with most frequent impacts.

The receptor of overall predicted maximum concentration (H1H maximum daily 1-hr concentration) belongs to site LNA-East; the receptor with most frequent maximum impact (H1H maximum daily 1-hr concentration) belongs to the Highway 25 site, at approximately 37%.[15] Overall the Highway 25 site experiences more frequent maximum impacts (59.1%) than the LNA-East site (40.9%).

Table 3-1. Frequency Analysis Results

Site	Receptor ID	Maximum Concentration (H1H MAXDAILY) $\mu g/m^3$	Receptor ID	Frequency Count	Frequency % per Receptor	Frequency per Site
LNA East	REC1	5.17	REC1	72	3.95%	
LNA East	REC2	5.12	REC2	133	7.30%	
LNA East	REC3	5.34	REC3	36	1.98%	745 hits 40.9%
LNA East	REC4	5.29	REC4	33	1.81%	
LNA East	REC5	5.31	REC5	471	25.86%	
HWY25	REC6	4.28	REC6	22	1.21%	
HWY25	REC7	4.41	REC7	267	14.66%	
HWY25	REC8	4.16	REC8	26	1.43%	1,076 hits 59.1%
HWY25	REC9	4.12	REC9	668	36.68%	
HWY25	REC10	4.18	REC10	93	5.11%	
MAX	***REC3***	***5.34***	***REC9***	***668***	***36.68%***	
MIN	***REC9***	***4.12***	***REC6***	***22***	***1.21%***	
AVG		***4.74***				
STD		***0.52***				

The modeling results for the 10 receptors of interest were reviewed further and ranked, based on both the frequency of occurrence of the maximum daily impact (H1H) occurring at that receptor location, as well as the ranking of the H1H maximum daily impact at that receptor. In other words, REC4 has the highest H1H

[15] It should be noted that the LNA-East site (REC1-REC5) is located on the side of a steep terrain feature, and location of a monitor at this site would not be recommended.

MAXDAILY concentration of 5.34 μg/m³, so it has a concentration rank of #1. REC9 has the highest frequency county, so its frequency rank was #1. The concentration rank, and frequency rank, were then summed to provide the overall score for that receptor. Table 3-2 provides a further summary of that ranking effort.

Table 3-2. Receptor Ranking Analysis Results

Site	Receptor ID	Maximum Concentration (H1H MAXDAILY) μg/m³	Concentration Rank	Receptor ID	Frequency Count	Frequency Rank	Score	Score Rank
LNA East	REC1	5.17	4	REC1	72	6	10	5
LNA East	REC2	5.12	5	REC2	133	4	9	3
LNA East	REC3	5.34	1	REC3	36	7	8	2
LNA East	REC4	5.29	3	REC4	33	8	11	6
LNA East	REC5	5.31	2	REC5	471	2	4	1
HWY25	REC6	4.28	7	REC6	22	10	17	9
HWY25	REC7	4.41	6	REC7	267	3	9	3
HWY25	REC8	4.16	9	REC8	26	9	18	10
HWY25	REC9	4.12	10	REC9	668	1	11	6
HWY25	REC10	4.18	8	REC10	93	5	13	8

As can be seen from Table 3-2 above, although Receptor 9 (REC9) does not have the highest daily maximum concentration impact as evaluated for the areas of interest, when considering the high frequency of maximum daily impacts at the REC9 location, by scoring the receptor locations as conducted above it provides additional supporting information for selection of the area around REC9 and the Highway 25 site location as the monitor location.

3.2. NON-MODELING FACTORS

The two primary potential site locations (area of maximum impact, LNA-East, and area of most frequent maximum impact, Hwy 25) were further evaluated for non-modeling factors, as outlined below. Both sites are on property currently owned by LNA.

Location **LNA-East**:

- Wooded area; would require additional cost for land clearing and providing site access (i.e. access road)
- Relatively steep hill and hill top (approximately 70 to 130 feet above the mean facility level)
- Reasonably close proximity to existing power (400 feet)
- Security concerns with nearby residents
- LNA owned property, outside ambient air boundary

Location **Highway 25**:

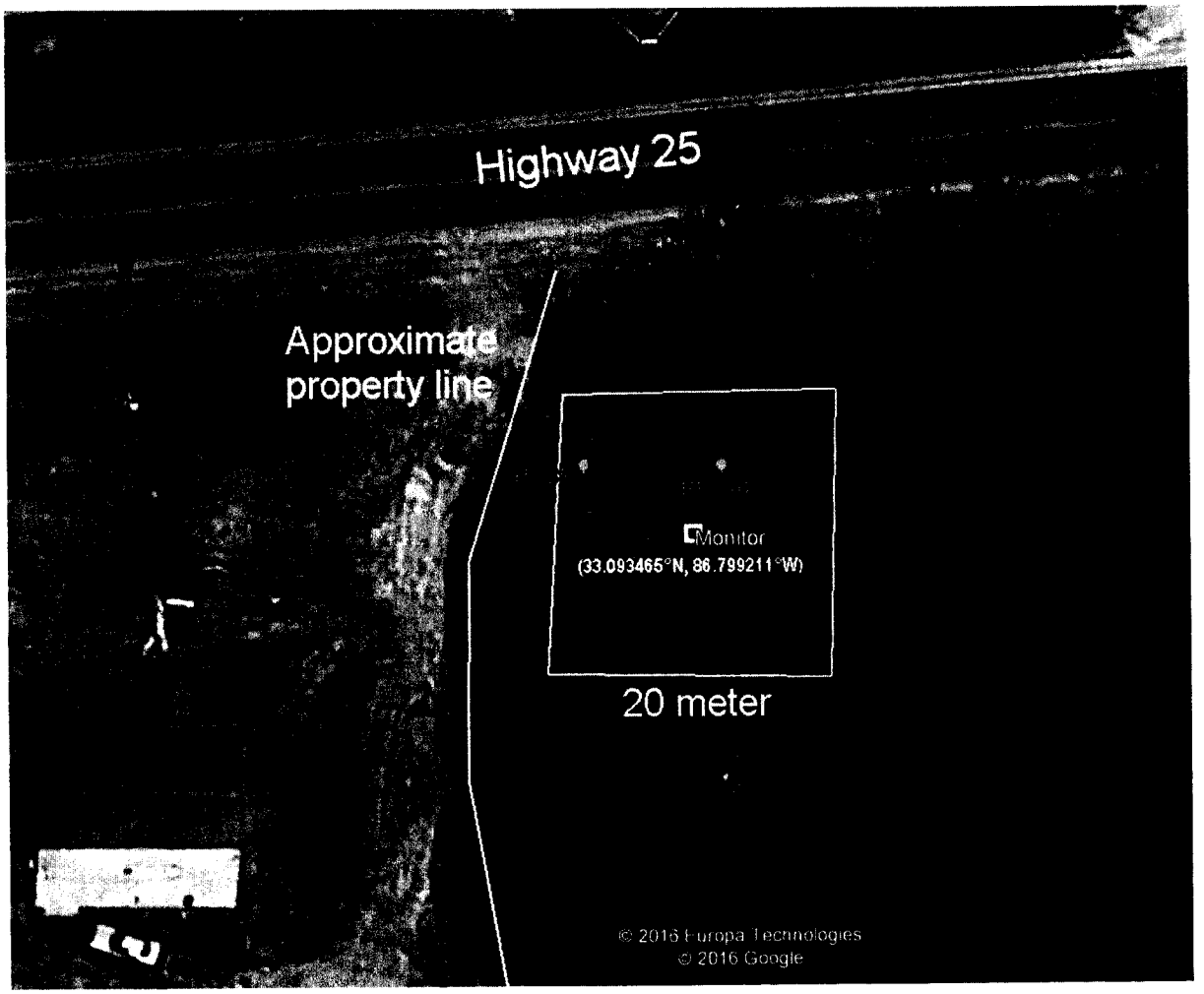
- Wooded area; would require additional cost for preparation
- Some uneven terrain (approximately 20 to 40 feet above the mean facility level)
- Very close proximity to existing power (20 – 50 feet)
- Very close proximity to highway 25 (70 – 85 feet), and accessible via Hwy 25
- LNA owned property, outside ambient air boundary

3.3. CONCLUSIONS

Considering all aspects of the analysis, it was concluded that that the **Highway 25 site location** is the most appropriate location for monitor placement, based on the results of the modeling analysis and the governing non-modeling factors. The location is in the immediate proximity of the facility but not on the primary facility grounds, experiences the highest frequency of maximum daily 1-hr impacts of SO_2 as predicted by the modeling analysis, and is located in a relatively open, accessible, and power-provided area. The proposed location is shown on Figure 3-4.

The approximate coordinates for the proposed monitor location chosen are Lat 33.093465°N and Lon 86.799211°W. These coordinates are within approximately 9.3 meters of the receptor REC9 coordinates and 4.7 meters of REC10. The proposed monitor location is offset from the highest frequency receptor coordinates in order to provide more distance for the monitor location from the nearby roadway. Given the limitations of the model the results were interpreted in terms of being more suggestive of the area of the highest/most frequent impacts rather than as a precise tool for coordinate estimation.

Figure 3-4. Approximate Proposed Monitor Location



APPENDIX A: MODELING CD

APPENDIX B: ARGOS DOCUMENTATION

ARGOS

March 28, 2016

Mr. Michael Will
Senior Environmental Engineer
Lhoist North America
7444 Hwy 25
Calera, AL 35040

Mr. Will:

We have considered the request from Lhoist America to locate a SO_2 ambient air monitoring system on property owned by Argos Cement in Calera. This letter also complies with the Lhoist request to respond by letter. After reviewing the matter from a legal and technical standpoint, we respectfully decline the Lhoist request to locate the system on our property at this time.

Sincerely,

Argos Cement LLC

William Voshell

William Voshell
US Environmental Director

3015 Windward Plaza
Suite 300
Alpharetta, GA 30005

Blank Page

From: [redacted]
Sent: Monday, June 20, 2016 7:44 AM
To: Malaier, Mike
Subject: Request Air quality monitors in Mobile, AL

Follow Up Flag: Follow up
Flag Status: Flagged

I have been a downtown resident of Mobile within about [redacted] of the riverfront area downtown since 1976. During that time, I have had to power wash my entire home exterior at least 4 times a year at a minimum in order to clean off the residue which settles on it. When I had white columns they turned gray. In the 1990's I bought a new house and selected a gray exterior trim in order to reduce the visual impact of the residue, but of course the filth remains. At my other location I was on a busy street, and when I complained to authorities, I was told the problem was car exhaust...now I live on a quiet side street with almost no traffic and guess what? The residue is WORSE. I also live closer to the waterfront coal facility downtown and I am certain that contributes.

The recent news report on coal dust in Mobile, which included the testing of residue on homes in the area, makes it clear that we are all dealing with excessive coal dust downtown.

While continually power washing our homes is expensive and creates unnecessary maintenance, the real problem of course is that what is on our window sills is also in our lungs.

I have found that the closest ADEM monitor is in Chickasaw, Al, and that the downtown air monitors have not been in place for 10 years.

As a taxpayer, this is unconscionable to me, considering the increasing industrialization on Mobile's waterfront.

I ask that ADEM install and monitor air quality monitors near the industrial facilities--including coal piles--in Mobile, and report the results to the public regularly.

[redacted]

--
[redacted]

From: [redacted]
Sent: Monday, June 20, 2016 9:11 AM
To: Malaier, Mike
Cc: [redacted]
Subject: 2016 Ambient Air Monitoring Plan

TO: Michael E. Malaier, Chief, Air Assessment Unit, Field Operations Division, Alabama Department of Environmental Management

Regarding the 2016 Ambient Air Monitoring Plan, sufficient air monitors in downtown Mobile and any other areas subject to heavy air pollution, e.g., on the waterfront, are of utmost importance. Please take the steps necessary to insure adequate monitoring is available in such areas.

Thank you.

[redacted]

From: [redacted]
Sent: Monday, June 20, 2016 11:12 AM
To: Malaier, Mike
Subject: Air Quality Monitoring

I hereby request that the state install air quality monitors for downtown Mobile. The fact that the monitors were removed 10 years ago indicates a serious disregard for the health of the community. Please correct this travesty. [redacted]

From: [redacted]
Sent: Monday, June 20, 2016 12:02 PM
To: Malaier, Mike
Subject: Air quality monitors

I am requesting replacement of air quality monitors for downtown Mobile. [redacted] Sent from my iPhone

From: [redacted]
Sent: Monday, June 20, 2016 1:46 PM
To: Malaier, Mike
Subject: Monitors

I want to request air quality monitors for our down areas [redacted]
[redacted]
[redacted]

Sent from my iPhone

From: [redacted]
Sent: Monday, June 20, 2016 2:32 PM
To: Malaier, Mike
Subject: Air Monitors

There are presently no air monitors in the industrial areas of Mobile County. Please furnish air monitors to the heavy air pollution areas in Mobile i.e. waterfront, Council School, etc. Thank you! [redacted]

From: [redacted]
Sent: Monday, June 20, 2016 2:43 PM
To: Malaier, Mike
Subject: Comment on 2016 Alabama Air Monitoring Plan

Mr. Malaier,

As part of the 2016 Air Monitoring Plan, I would like to request that an air quality monitoring station be installed in downtown Mobile. The current monitoring stations in Chickasaw and Dauphin Island Parkway are too far away to adequately assess the air quality in the downtown area. As the Port of Mobile continues to add capacity and as our city continues to encourage growth in petrochemical and other chemical facilities and transport, it is essential that we adequately protect citizens in the impacted areas...namely downtown Mobile.

It seems to me that, if the Clean Air Act requires that the state adequately monitor ambient air quality throughout the state to be sure that we are in compliance with the National Ambient Air Quality Standards, then the monitors should be located where the air is most likely to be affected by emissions from industry and the Port of Mobile. That activity is centered in downtown, but there are no nearby tools to measure air quality. I believe that the requirement for "adequate" monitoring is not being met with the current configuration, and I urge you to place a monitoring station in downtown Mobile.

Thank you for allowing this comment on the proposed plan for Alabama.

[redacted]

[redacted]

June 20, 2016

Michael E. Malaier, Chief
Air Assessment Unit, Field Operations Division
Alabama Department of Environmental Management
P.O. Box 301463, Montgomery, AL 36130-1463
1350 Coliseum Boulevard, Montgomery, AL 36110-2059)
Sent via email mml@adem.state.al.us.

Re: Comments on the State of Alabama Ambient Air Monitoring Plan for 2016

Dear Mr. Malaier:

I respectfully submit the following comments to the Alabama Department of Environmental Management (ADEM) on the State of Alabama Ambient Air Monitoring Plan for 2016, and appreciate the opportunity to make these public comments. I advocate for stronger, more comprehensive air monitoring throughout Alabama. In order for the state air monitor locations to be fair representatives of air quality in the state, a larger percent of their locations should be in the immediate vicinity of the known air polluting industries in the state.

I would like to focus on the air quality issues of the residential, school, and business neighborhoods of Mobile, Alabama's downtown heavy industrial waterfront. The citizens, that live, work, and visit these vital areas of the city, frequently experience breathing vapors from the nearby above ground storage tanks. They are also dealing with the constant fugitive coal dust fall-out from the open stockpiles of coal stored and transferred by the coal handling facilities on the waterfront.

At present there are no air quality monitors in this area to support the air quality characterization for this area with nearby high populations of susceptible individuals. There is no evidence of a safe level of exposure for these pollutants, and both have negative health effects. By removing or not adding air monitors in this area, ADEM is not protecting public health, and is adding to the overall degradation of the air monitoring surveillance network in the state.

I encourage ADEM to willingly support and go beyond the duty of protecting Alabama's air quality, and be in full compliance with the Clean Air Act (CAA) and the National Ambient Air Quality Standards (NAAQS).

Alabamians want to be assured that the air we breathe is clean and healthy.

Respectfully submitted,

[redacted]

From: Tonya Bunn <TBunn@bcmlawyers.com>
Sent: Monday, June 20, 2016 3:10 PM
To: Malaier, Mike
Subject: Comments on the State of Alabama Ambient Air Monitoring Plan for 2016
Attachments: 2016-06-20 Letter to ADEM.pdf

Mr. Malaier,

Please see attached letter from Peter F. Burns. I am also sending via US Mail.

Tonya L. Bunn, Paralegal
Burns, Cunningham & Mackey PC
PO Box 1583
Mobile, Alabama 36633
Telephone: (251) 432-0612
Direct: (251) 434-2553
Facsimile: (251) 432-0625
http://www.bcmlawyers.com/

BURNS, CUNNINGHAM & MACKEY, PC
Attorneys at Law

Peter F. Burns
Author's Direct No. (251) 434-2550
Author's Email: PFBurns@BCMLawyers.com

June 20, 2016

VIA EMAIL: mml@adem.state.al.us
Michael E. Malaier, Chief
Air Assessment Unit, Field Operations Division
Alabama Department of Environmental Management
P. O. Box 301463, Montgomery, AL 36130-1463
1350 Coliseum Blvd., Montgomery, AL 36110-2059

RE: Comments on the State of Alabama Ambient Air Monitoring Plan for 2016

Dear Mr. Malaier:

I appreciate the Alabama Department of Environmental Management (ADEM) allowing community comment on the State of Alabama Ambient Air Monitoring Plan for 2016. I have worked in downtown Mobile for 40 years and owned property downtown for over 30 years. In addition, my wife and I live downtown.

The air pollution we experience comes from the waterfront and that is where the monitors need to be located. Fortunately, Mobile is developing more vibrant tourist activity and a more robust residential component to its downtown area. Air quality in this area needs to be monitored and made available to interested residents.

The Mobile medical community, including the Health Officer, Dr. Bert Eichold, has spoken out against the petroleum tanks that lack vapor recovery and the open coal handling facilities that use tractors instead of conveyor belts to move coal. These industries and practices are hurting the health of our community.

Please monitor the air where these industries are operating.

From: [redacted]
Sent: Monday, June 20, 2016 3:15 PM
To: Malaier, Mike
Subject: ADEM: State of Alabama Ambient Air Monitoring Plan for 2016

June 20, 2016

Mr. Michael E. Malaier, Chief
Air Assessment Unit, Field Operations Division
Alabama Department of Environmental Management
P.O. Box 301463, Montgomery, AL 36130-1463
1350 Coliseum Boulevard, Montgomery, AL 36110-2059)
Sent via email mml@adem.state.al.us.
Re: Comments on the State of Alabama Ambient Air Monitoring Plan for 2016

Dear Mr. Malaier,

I am writing to you concerning the State of Alabama's Air Monitoring Plan for 2016 and specifically for Mobile because of the impact of various industries, especially coal storage, as related to the air quality issues of the residential, school, and business neighborhoods of Mobile and . The citizens, that live, work, and visit these vital areas of the city, frequently experience breathing vapors from the nearby above ground storage tanks. This would also include the general public who visit Mobile which could ultimately cost the City of Mobile, Mobile much tourism dollars. The constant coal dust fall-out from the open stockpiles of coal stored and transferred by the coal handling facilities on the waterfront is contributing greatly to the air quality issues facing these individuals.

ADEM removed the air quality monitors in this area some 10 years ago and the closest monitors are locate in Chickasaw which would provide no benefit for the City of Mobile. Therefore, there is no way at the present time that ADEM can provide the support needed for air quality unless air quality control monitors are re-installed. There have been two news reports this year that highlighted the coal dust problem, including remarks being made by Port Authority representatives stating that there was no issue, but in fact subsequently it was proven by testing samples that there was a problem with the open coal storage. ADEM has a responsibility to protect public health and if it does not install such Air Quality Control Methods, it would be contributing to the degradation of the health of its citizens in Mobile as well as the general public that visits Mobile.

By this e-mail, I asking ADEM to reassure the Alabama citizens that they will install an air quality monitoring in downtown Mobile near the industrialized waterfront, especially near the coal facilities, and any other area that is deemed necessary and appropriate.

Sincerely,

[redacted]

From: [redacted]
Sent: Monday, June 20, 2016 3:47 PM
To: Malaier, Mike
Subject: Comments on the Ambient Air Monitoring 2016 Consolidated Network Review

Michael E Malaier, Chief
Air Assessment Unit
ADEM
PO Box 301463
Montgomery, AL 36110-2059
Via email at mml@adem.state.al.us

Dear Mr. Malaier,

I am writing in response to your agency's request for public comments on the 2016 Ambient Air Monitoring Plan. If the air quality of the state is to be adequately monitored, it would seem fair to require that monitors be installed close to sources of air pollution. Unfortunately - as in the case in downtown Mobile- this is not always the case.

I have been concerned about the air quality in downtown Mobile given the increase in port activity geared to polluting industries (oil and gas, coal, etc) - all in close proximity to homes, schools, and historic attractions. The deleterious effects of fugitive coal dust and vapors from above-ground oil storage tanks have been well documented. I would urge your agency to install ambient air quality monitors in downtown Mobile.

Respectfully yours,

[redacted]

Sent from my iPad

From: [redacted]
Sent: Monday, June 20, 2016 4:26 PM
To: Malaier, Mike
Subject: comments on air monitoring

[redacted]

June 20, 2016

Michael E. Malaier, Chief
Air Assessment Unit, Field Operations Division
Alabama Department of Environmental Management
P.O. Box 301463, Montgomery, AL 36130-1463
1350 Coliseum Boulevard, Montgomery, AL 36110-2059)

Sent via email mml@adem.state.al.us.

Re: Comments on the State of Alabama Ambient Air Monitoring Plan for 2016

Dear Mr. Malaier:

Thank you for the opportunity to comment on the subject of air monitoring for Alabama, especially for the City of Mobile.

Mobile is changing rapidly. In the past several years there have begun to be vehicles lined for miles on Government St. and I-10 waiting to transit our two tunnels almost daily, especially in the sulmmer afternoon rush hours. There are hundreds of vehicles operating at inefficient idle speeds spewing out toxic exhaust for hours. (This is the impetus for a proposed new I-10 bridge)

Mobile has seen a dramatic increase in petro and chemical storage tanks, with more recently approved. Without vapor recovery, these tanks add an undetermined amount of toxin to the atmosphere. In addition, there has been an increase in volume at Mobile coal handling terminals.

Located in the midst of all this polluting growth, is a viable expanding downtown business and residential area, drawing new residents and employees to the area. Three elementary schools and a Community College are in this mix.

I believe that common sense dictates that the air be monitored much more closely than it has been in the past.

Respectfully;

[redacted]

Sent by email

From: [redacted]
Sent: Monday, June 20, 2016 4:29 PM
To: Malaier, Mike
Subject: Monitoring Air Quality and enforcing air quality regulations

As a resident who lives near downtown Mobile, AL I am writing to request that air monitors be installed downtown.

Tests conducted recently found high concentrations of coal dust

From: [redacted]
Sent: Monday, June 20, 2016 4:53 PM
To: Malaier, Mike
Subject: Air Monitors for downtown Mobile

Hello,
As a resident who lives near downtown Mobile, AL I am writing to request that air monitors be installed downtown.

Tests conducted recently found high concentrations of coal dust downtown. A sample taken from a home[redacted] from Council Elementary School contained approximately 30 percent coal dust.

According to medical experts, exposure to coal dust can be linked to all four of the leading causes of death in the United States: heart disease, cancer, respiratory diseases, and stroke. Children are most at risk, because their lungs are still developing, and they take in more air per unit per weight than adults do.

Details on the tests can be found here:
https://s3.amazonaws.com/uploads.knightlab.com/storymapjs/da3c5d9e23ab425dd72654fc386efa0b/coal-dust/index.html

Given these test results, ADEM has a responsibility to the citizens of Mobile to monitor our air quality and enforce air quality regulations.

Thank you for your consideration.
Sincerely,
[redacted]

From: Keith Johnston <kjohnston@selcal.org>
Sent: Monday, June 20, 2016 5:06 PM
To: Malaier, Mike
Cc: Gore, Ron; Christina Andreen
Subject: Alabama Annual Air Monitoring Plan for 2016
Attachments: 2016-06-20 SELC Comments on AL Air Monitoring Network.pdf

Mr. Mailer,

Please accept the attached comments from the Southern Environmental Law Center concerning the Alabama Annual Air Monitoring Plan for 2016. If you have any questions, don't hesitate to ask.

Best regards,

Keith Johnston
Managing Attorney, Birmingham Office
Southern Environmental Law Center
2829 Second Ave. S.
Ste. 282
Birmingham, AL 35233
tel: (205) 745-3060
fax: (205) 745-3064
www.southernenvironment.org

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 205 745-3060 | 2829 2ND AVENUE SOUTH, SUITE 282 BIRMINGHAM, AL 35233-2838 | Facsimile 205 745 3064

June 20, 2016

Via U.S. Mail and E-Mail

Mr. Michael E. Malaier, Chief
Air Assessment Unit
Field Operations Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463
mml@adem.state.al.us

RE: Comments on the State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review

Dear Mr. Malaier:

The Southern Environmental Law Center (SELC) respectfully submits the following comments on the State of Alabama Annual Ambient Air Monitoring Plan for 2016 (2016 Plan) as presented by the Alabama Department of Environmental Management (ADEM), the Jefferson County Department of Health and the Huntsville Department of Natural Resources and Environmental Management.[1]

ADEM should reestablish its monitoring of PM_{10} in the Mobile MSA. ADEM closed the only PM_{10} monitoring site in the Mobile MSA in 2014, stating that the monitor had recorded decreasing concentrations of PM_{10} at the WKRG site[2] and that the agency would still meet the requirements for PM_{10} monitoring even with the closure of this site.[3] In the Ambient Air Monitoring Plan for 2014, ADEM proposed closure of the PM_{10} monitoring site in Mobile MSA, stating "problems with the infrastructure" and "expense required to maintain the site" as reasons for closure.[4] Gasp, a non-profit health advocacy organization working for healthy air in the state, submitted comments requesting ADEM to leave this monitor in place because "an ambient air monitoring plan that adequately protects human health will seek to implement more, not less monitoring."[5] ADEM refused this request.

[1] ADEM, State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review (2016) [hereinafter "2016 Plan"].
[2] *See* Letter from Ron Gore, ADEM, to Haley Lewis, Gasp, Gasp Comments on Alabama's 2015 Ambient Air Monitoring Plan (July 15, 2015).
[3] ADEM, State of Alabama Ambient Air Monitoring 2014 Consolidated Network Review, at 21 (2014).
[4] ADEM, State of Alabama Ambient Air Monitoring 2015 Consolidated Network Review, at 21 (2015).
[5] Letter from Haley Lewis, Gasp to Michael E. Malaier, ADEM, Comments on 2015 Annual Air Monitoring Plan, (July 2, 2015).

Coal dust is a known air pollutant problem in and around the Mobile MSA. There are two coal terminals, the McDuffie Coal Terminal and the Chipco Terminal, that operate along the Mobile River, close to downtown Mobile. Both are required by their ADEM air permits to "minimize the emissions of air contaminants," but the only emissions limitation is a 20% opacity requirement for the McDuffie terminal.[6] Recent investigations by Fox10 News have found coal dust throughout downtown Mobile.[7] For instance, one block from the Council Traditional School, the sample taken by the news agency contained approximately 30% coal dust, and samples taken at South Dearborn Street and at DeTonti Square both showed coal dust up to 20%.[8] Coal dust can contain antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel and selenium.[9]

Fugitive coal dust emissions from coal storage contribute to concentrations of PM_{10}.[10] PM_{10} can remain airborne longer and travel further than the visible coal dust particles that can be seen around Mobile. PM_{10} particles are "capable of reaching the most sensitive areas of the lung, including the trachea, bronchi, and deep lungs."[11] "Studies suggest that short-term exposure to coarse particles (PM_{10}) may be linked to premature death and increased hospital admissions and emergency department visits for heart and lung disease."[12]

ADEM should reinstate monitoring of PM_{10} in the Mobile MSA. The recent investigations in the area show that PM_{10} is a potentially significant problem to a significant portion of people within the Mobile MSA. While there is a $PM_{2.5}$ monitor in Chickasaw, a $PM_{2.5}$ monitor tracks a different source of dust. Most $PM_{2.5}$ comes from *combustion* of coal and other materials, while PM_{10} comes from road dust, *coal dust*, and other *non-combustion* sources.[13] Also, heavier particles, like PM_{10}, settle out of the air

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[6] *See* Cooper Marine & Timberlands Corporation, ChipCo Terminal, Air Permit No. 503-0102, Unit X003 (Jan. 26, 2010); Alabama Port Authority, McDuffie Island Coal Terminal, Air Permit No. 503-8011, Unit X002 (Mar. 24, 2009).

[7] Kati Weis, *Fox10 News Investigates: Coal Uncovered Part 1*, Fox10 (last updated May 18, 2016, 9:26 PM), http://meredithaz.worldnow.com/story/31985763/fox10-news-investigates-coal-uncovered.

[8] Katie Weis, *Fox10 News Investigates: Coal Uncovered Part 2*, Fox10 (May 19, 2016, 1:01 PM), http://www.fox10tv.com/story/32010628/fox10-news-investigates-coal-uncovered-part-2.

[9] Viney P. Anjea, Aaron Isherwood, Peter Morgan *Characterization of particulate matter (PM_{10}) relates to surface coal operations in Appalachia*, ATMOSPHERIC ENVIRONMENT 54 (2012) 496-501; *see* Michael J. Ahrens and Donald J. Morrisey, *Biological Effects of Unburnt Coal in the Marine Environment*, OCEANOGRAPHY AND MARINE BIOLOGY (2005) VOL. 43: 69-122, 80-82, https://www.researchgate.net/publication/236876904.

[10] *See, e.g.*, Ernest Vrins & Sef van den Elshout, *Managing and Monitoring Fugitive Dust Emissions Using Real-Time PM Measurements* (Apr. 2007), *available at* https://www.researchgate.net/publication/228527877_MANAGING_AND_MONITORING_FUGITIVE_DUST_EMISSIONS_USING_REAL-TIME_PM_MEASUREMENTS.

[11] National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3086, 3164 (Jan. 15, 2013).

[12] *Revised Air Quality Standards for Particle Pollution and Updates to the Air Quality Index (AQI)*, Environmental Protection Agency, https://www3.epa.gov/airquality/particlepollution/2012/decfsstandards.pdf (last visited June 20, 2016).

[13] *What is Particulate Matter*, Pima County Government https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Environmental%20Quality/Air/Air%20Monitoring/AAWhat%20is%20Particulate%20Matter.pdf (last visited June 20, 2016).

more quickly than $PM_{2.5}$, although PM_{10} can still travel hundreds of yards up to 30 miles from the source.[14] Without the proper safeguards in place, such as adequate monitoring of PM_{10} concentrations, it is impossible to know whether the National Ambient Air Quality Standard is being exceeded and whether emissions from the coal terminals are harming the citizens of Mobile and the surrounding environment.

In addition, ADEM monitors for $PM_{2.5}$ in the Mobile MSA at one site, in Chickasaw.[15] However, there are no monitors for $PM_{2.5}$ close to downtown Mobile, where coal dust has been found in significant quantities, likely because of emissions from the nearby coal terminals. ADEM should monitor for $PM_{2.5}$ close to Mobile to ensure that concentrations are at safe levels and in compliance with state and federal air quality standards.

Respectfully submitted,

Keith Johnston

Keith Johnston

KAJ/cma

[14] *Id.*

[15] *See* 2016 Plan at 25, 121.

From: Haley Colson Lewis <haley@gaspgroup.org>
Sent: Monday, June 20, 2016 3:25 PM
To: Malaier, Mike
Subject: Gasp Comment on State of Alabama Annual Ambient Air Monitoring Plan for 2016
Attachments: Gasp Comment Cover Letter.pdf; Gasp Comment FINAL DRAFT.pdf

Categories: Green Category

Mr.. Malaier,

Please find attached to this message Gasp's Comment on the State of Alabama Annual Ambient Air Monitoring Plan for 2016.

Thank you.

--
Haley Colson Lewis
Staff Attorney, Gasp
205.938.4272 • haley@gaspgroup.org

2320 Highland Avenue S., Suite 270, Birmingham, AL 35205 • gaspgroup.org
Facebook • Twitter • Instagram • YouTube

June 20, 2016

VIA ELECTRONIC & U.S. MAIL

Michael E. Malaier, Chief
Air Assessment Unit
Field Operations Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463

Mr. Malaier,

Please find attached to this letter Gasp's comment on Alabama's Ambient Air Monitoring Plan for 2016.

We appreciate the opportunity to comment. Please do not hesitate to contact me should have any questions or need any additional information.

Sincerely,

Haley Colson Lewis
Staff Attorney

CLEAN AIR. HEALTHY COMMUNITIES.

June 20, 2016

VIA ELECTRONIC MAIL AND US MAIL

Michael E. Malaier, Chief

Air Assessment Unit

Field Operations Division

Alabama Department of Environmental Management

P.O. Box 301463

Montgomery, AL 36130-1463

Re: State of Alabama Ambient Air Monitoring Plan for 2016

Dear Mr. Malaier:

Gasp[1] respectfully submits the following comment to the Alabama Department of Environmental Management (ADEM) on the State of Alabama Annual Ambient Air Monitoring Plan for 2016 ("the Plan"). We appreciate the opportunity to make these public comments. Gasp not only looks forward to continued compliance with the Clean Air Act (CAA) and the National Ambient Air Quality Standards (NAAQS), but we also will continue to advocate for stronger, more comprehensive air monitoring throughout Alabama.

I. Purpose

Gasp is a health advocacy organization focused on air quality issues in the Greater Birmingham Area. Accordingly, Gasp has a vested interest in the Plan. We are pleased to see decreases in many criteria and non-criteria pollutants.[2][3] Birmingham and Jefferson County's rankings also improved for

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[1] Gasp is a non-profit health advocacy organization fighting for healthy air in Alabama. We strive to reduce air pollution through education and advocacy — because Alabamians deserve clean, healthy air. http://www.gaspgroup.org

[2] The Birmingham-Hoover MSA saw decreases in three year averages for ozone and particulate matter for

[3] -2013. U.S. EPA AirData, http://www.epa.gov/airdata (last visited June 16, 2016); American Lung Association, State of the Air 2014 (2014) http://www.stateoftheair.org/2014/assets/ALA_State_of_the_Air_2014.pdf (last visited June 15, 2016).

2016, where Birmingham ranked 22nd in annual particle pollution and 53rd in high ozone days.[4] However, we maintain that a comparison to the past is the incorrect standard. We encourage the Jefferson County Department of Health (JCDH) to not simply comply with the NAAQS, but to fully embrace their duty of protecting Alabama's air quality. Our detailed comments will highlight specific aspects of the JCDH Annual Air Monitoring Network Plan that could be improved to reach aspirational, not mere threshold standards of compliance. We also will offer recommendations and pose inquiries that hopefully will not only strengthen the Plan itself but also enhance Gasp's understanding of the proposed changes for 2016.

II. Planned SO_2 DRR Monitoring at Shuttlesworth for One Year

The Plan states in its "Summary of changes for JCDH in 2016" that there is "[p]lanned] SO_2 DRR Monitoring at Shuttlesworth for One Year.[5]" Other than this short sentence, no further information appears in the Plan regarding JCDH's plans for SO_2 DRR monitoring at the Shuttlesworth monitor.

Without additional information, such as whether the "one year" is 2016, 2017 or some other year, it is difficult for Gasp to meaningfully weigh in on this aspect of the Plan. Gasp is aware that no sources of SO_2 with emissions above 2,000 tons per year in Jefferson County appear on the final list compiled by EPA[5]. Gasp also notes that in the letter from ADEM to EPA on January 14, 2016 listing all sources within its jurisdiction that have SO_2 emissions that exceeded the 2,000 tons per year annual threshold, no facilities in Jefferson County are listed.[6] Gasp understand that no source in Jefferson County would exceed the 2,000 ton per year threshold[7]. Accordingly, any approaches for ambient monitoring or air quality modeling under the DRR will not be submitted to EPA on July 1, 2016 for sources within Jefferson County. Gasp would be interested to learn the rationale for planning SO_2 DRR monitoring at the Shuttlesworth monitor. Additionally, Gasp would also like information as to when the one year period for DRR monitoring at the Shuttlesworth monitor will begin and end. Such information would improve Gasp's understanding of this proposed change for 2016.

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[4] American Lung Association, State of the Air 2015 (2015) http://www.stateoftheair.org/2015/assets/ALA_State_of_the_Air_2015.pdf (last visited June 16, 2016).

[5] State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review at 3 (proposed May 2, 2016), *available at* http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf. [5] U.S. EPA, DRR Source List, *available at* https://www3.epa.gov/airquality/sulfurdioxide/drr/drr-sourcelist-epa.pdf (last updated May 24, 2016).

[6] Letter from Ronald W. Gore, Chief, Air Division, Alabama Department of Environmental Management (Jan. 14, 2016) (publicly available through EPA at https://www3.epa.gov/airquality/sulfurdioxide/drr.html).

[7] E-mail from Jason Howanitz, Senior Air Pollution Control Engineer, Air and Radiation Protection Division, Jefferson County Department of Health (June 16, 2016, 07:57 PM CST) (on file with author) (stating that no sources in Jefferson County were subject to DRR because none met the 2,000 tpy threshold).

III. Addition of $PM_{2.5}$ continuous monitor at Shuttlesworth

In 2015, Gasp commented on JCDH's plan to discontinue monitoring for $PM_{2.5}$ at the Shuttlesworth monitor[8]. Although Gasp was unpersuaded by JCDH's reasoning in response to our comments[9], we are pleased to see that the Plan for 2016 includes the addition of a $PM_{2.5}$ continuous monitor at the Shuttlesworth monitor. Especially where this monitor was initially operated as a special purpose monitor for one year to address community concerns[10], the communities in Northern Birmingham will surely benefit from the continuation of monitoring for $PM_{2.5}$ at the Shuttlesworth monitor.

In APPENDIX A of the Plan, JCDH asserts that they will "continue to monitor for $PM_{2.5}$ at this site using a continuous monitoring method where the results will be publically accessible through the AirNow website located in the JCDH webpage.[11]" As of the date of this comment, we are five and a half months into 2016. Accordingly, it is troubling that no monitor values are currently being recorded for the Shuttlesworth monitor on EPA's AirData website. The absence of the Shuttlesworth monitor from the AirData results can be seen in **FIGURE 1**[12] and **FIGURE 2**[11] below.

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[8] Specifically, Gasp cited the inadequacy of the Sloss Shuttlesworth site collecting data for only 2013 and 2014. "JCDH cannot even assess the $PM_{2.5}$ standard because there is not sufficient data for a third year of measurements where the $PM_{2.5}$ monitor will be discontinued for 2015. At the very least, especially considering monitoring for $PM_{2.5}$ at the Sloss Shuttlesworth site occurred to address community concerns, the monitor should collect emissions data for *at least* three years." Lewis, H., Gasp Comment on State of Alabama Ambient Air Monitoring Plan for 2015 (2015).

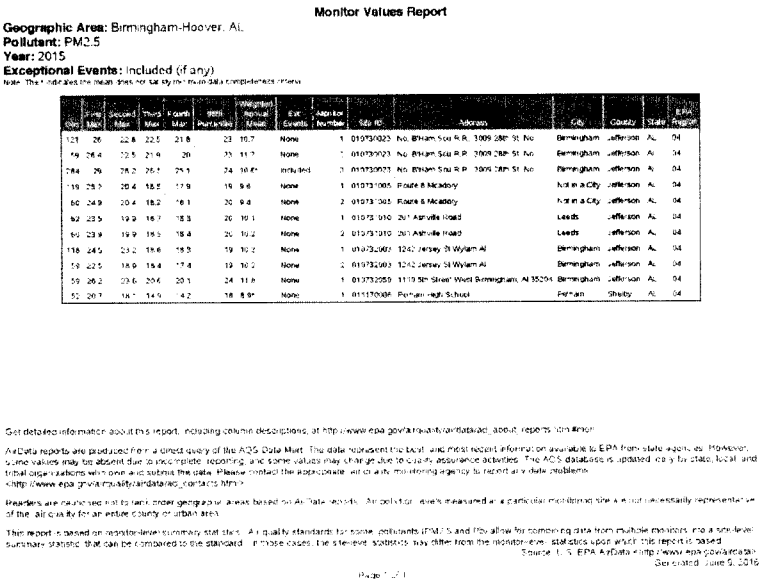
[9] In a letter dated July 15, 2015, JCDH responded to Section III.B.2. of Gasp's comments addressing the closure of the $PM_{2.5}$ monitor at the Sloss Shuttlesworth site by saying, in part, "[t]he $PM_{2.5}$ data collected at the Shuttlesworth site continuously spanned approximately 12 months between the middle of 2013 and the middle of 2014 Therefore there was not 2 full years of data collected at this site. The $PM_{2.5}$ data that was sampled at the Shuttlesworth site was compared to the $PM_{2.5}$ sampled at the North Birmingham monitoring site during the same time period and it was concluded that the monitors were comparable and there was no need to continue to monitor for $PM_{2.5}$ at this time." Letter from Ronald W. Gore to author (Jul 15, 2015) (on file with author).

[10] *See* State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review at 55 (proposed May 2, 2016), *available at* http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf.

[11] State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review at 78 (proposed May 2, 2016), *available at* http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf. [12] U.S. EPA, AirData, http://www.epa.gov/airdata (last visited June 14, 2016).

[11] Id.

FIGURE 1: 2015 MONITOR VALUES REPORT, $PM_{2.5}$, BIRMINGHAM-HOOVER MSA



Monitor Values Report

Geographic Area: Birmingham-Hoover, AL
Pollutant: PM2.5
Year: 2015
Exceptional Events: Included (if any)

Obs	1st Max	2nd Max	3rd Max	4th Max	98th Percentile	Weighted Annual Mean	Ext. Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
121	26	22.8	22.5	21.8	23	10.7	None	1	010730023	No. Birm Sou R.R. 3909 28th St No	Birmingham	Jefferson	AL	04
59	26.4	22.5	21.9	20	23	11.7	None	1	010730023	No. Birm Sou R.R. 3909 28th St No	Birmingham	Jefferson	AL	04
284	26	25.2	25.1	25.1	24	10.6*	Included	3	010730023	No. Birm Sou R.R. 3909 28th St No	Birmingham	Jefferson	AL	04
119	25.3	20.4	18.5	17.9	19	9.6	None	1	010731005	Route 8 Mcadory	Not in a City	Jefferson	AL	04
60	24.9	20.4	18.2	16.1	20	9.8	None	2	010731005	Route 8 Mcadory	Not in a City	Jefferson	AL	04
62	23.5	19.9	18.7	18.3	20	10.1	None	1	010731010	201 Ashville Road	Leeds	Jefferson	AL	04
60	23.9	19.9	19.3	18.4	20	10.2	None	2	010731010	201 Ashville Road	Leeds	Jefferson	AL	04
118	24.5	23.2	19.6	18.3	19	10.2	None	1	010732003	1242 Jersey St Wylam Al	Birmingham	Jefferson	AL	04
58	22.5	18.9	18.4	17.4	19	10.2	None	2	010732003	1242 Jersey St Wylam Al	Birmingham	Jefferson	AL	04
59	26.2	23.6	20.6	20.1	24	11.0	None	1	010732059	1116 5th Street West Birmingham, Al 35204	Birmingham	Jefferson	AL	04
52	20.7	18.7	14.9	14.2	18	8.9*	None	1	011170004	Pelham High School	Pelham	Shelby	AL	04

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mv

AirData reports are produced from a stored query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.
<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site level statistics may differ from the monitor-level statistics upon which this report is based.
Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: June 6, 2016

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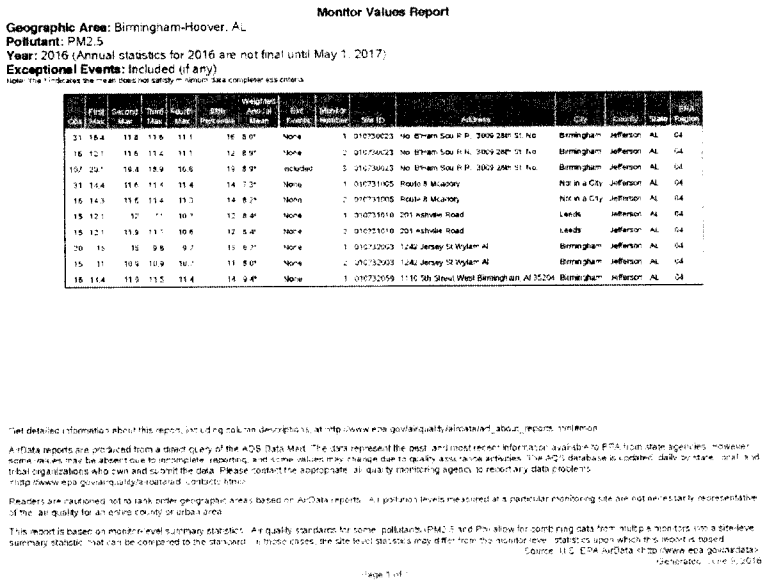
FIGURE 2: 2016 MONITOR VALUES REPORT, $PM_{2.5}$, BIRMINGHAM-HOOVER MSA



Monitor Values Report

Geographic Area: Birmingham-Hoover, AL
Pollutant: PM2.5
Year: 2016 (Annual statistics for 2016 are not final until May 1, 2017)
Exceptional Events: Included (if any)

Obs	1st Max	2nd Max	3rd Max	4th Max	98th Percentile	Weighted Annual Mean	Ext. Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
31	18.4	13.8	13.6	13.1	16	8.6*	None	1	010730023	No. Birm Sou R.R. 3909 28th St No	Birmingham	Jefferson	AL	04
16	12.1	11.6	11.4	11.1	12	8.5*	None	2	010730023	No. Birm Sou R.R. 3909 28th St No	Birmingham	Jefferson	AL	04
167	29.1	19.4	18.9	16.6	19	8.9*	Included	3	010730023	No. Birm Sou R.R. 3909 28th St No	Birmingham	Jefferson	AL	04
31	14.4	11.6	11.4	11.4	14	7.2*	None	1	010731005	Route 8 Mcadory	Not in a City	Jefferson	AL	04
16	14.3	11.6	11.4	11.3	14	8.2*	None	2	010731005	Route 8 Mcadory	Not in a City	Jefferson	AL	04
15	12.1	12	11	10.7	12	8.4*	None	1	010731010	201 Ashville Road	Leeds	Jefferson	AL	04
15	12.1	11.9	11.1	10.6	12	8.4*	None	2	010731010	201 Ashville Road	Leeds	Jefferson	AL	04
20	15	15	9.6	9.2	15	8.3*	None	1	010732003	1242 Jersey St Wylam Al	Birmingham	Jefferson	AL	04
15	11	10.9	10.9	10.7	11	8.6*	None	2	010732003	1242 Jersey St Wylam Al	Birmingham	Jefferson	AL	04
16	14.4	11.9	11.5	11.4	14	9.4*	None	1	010732059	1116 5th Street West Birmingham, Al 35204	Birmingham	Jefferson	AL	04

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mv

AirData reports are produced from a stored query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.
<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site level statistics may differ from the monitor-level statistics upon which this report is based.
Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: June 6, 2016

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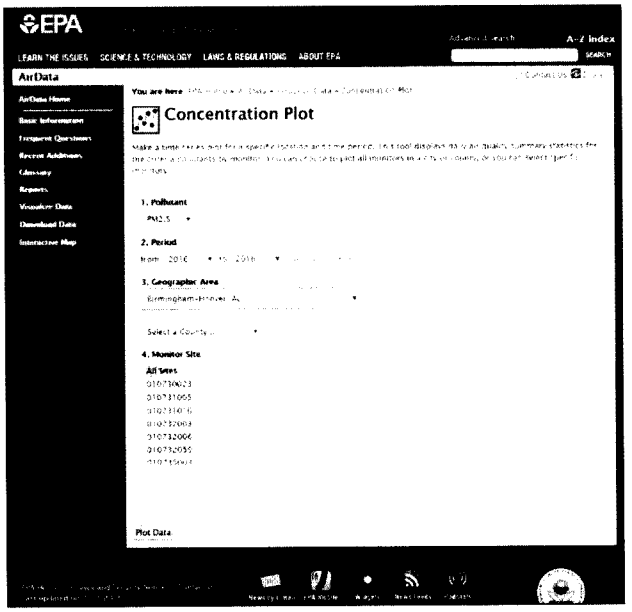
In the Plan, when describing the Shuttlesworth monitor (AQS Site ID073-6004), the graph indicates that sampling began on 02/01/2016 and is actively sampling.[12] As previously mentioned, when utilizing EPA's AirData resource, no monitor values for $PM_{2.5}$ at the Shuttlesworth monitor appear, as seen in **FIGURE 3**[13] below.

[12] State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review at 100 (proposed May 2, 2016), *available at* http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf.
[13] U.S. EPA, AirData, http://www.epa.gov/airdata (last visited June 14, 2016).

FIGURE 3: 2016 MONITOR SITES FOR $PM_{2.5}$ IN BIRMINGHAM-HOOVER MSA



Gasp is interested in clarification from JCDH when the Shuttlesworth monitor began collecting data. Additionally, if the monitor did begin sampling on 2/1/2016, Gasp would like to inquire as to why the monitor values are not being reported through AirData and added to the monthly concentration plot as they are for the other $PM_{2.5}$ monitors throughout the Birmingham-Hoover MSA.

IV. Additional Recommendations and Inquiries A. Gasp recommends the installation of an NO_2 monitor at Tarrant Elementary School to assess NO_2 concentrations for vulnerable and susceptible populations

In 2010, EPA revised the nitrogen dioxide (NO_2) National Ambient Air Quality Standards (NAAQS). As part of this rule, EPA required Regional Administrators to identify an additional forty (40) monitors that would be located in areas representing susceptible and vulnerable populations[14]. In 2012, EPA Region 4 did not identify candidate sites in Alabama.

Accordingly, no agencies in Alabama were required to install additional monitors in areas representing susceptible or vulnerable populations.

Although JCDH has installed the requisite number of monitors under NAAQS[15], Gasp would encourage JCDH to install a No_2 monitor at Tarrant Elementary School. Studies have shown that children

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[14] *See* 40 C.F.R. § 50.11 (2010); *See* National Ambient Air Quality Standards for Nitrogen Dioxide, 75 Fed. Reg. 26 (Feb. 9, 2010) (codified at 40 C.F.R. pts. 50 and 58).

[15] Where the Birmingham-Hoover MSA has a population greater than 500,000 and a major road the

are at an increased risk of NO_2 related health effects[18]. Accordingly, where the NAAQs requires a minimum of one monitor in the Birmingham-Hoover MSA, JCDH certainly would be within their authority to monitor for NO_2 at Tarrant Elementary School. Furthermore, where children between the ages of zero (0) and fourteen (14) are more susceptible to the health effects associated with nitrogen oxides, elementary school students certainly qualify as susceptible and vulnerable populations. Accordingly, where monitors should address community-wide concerns, it would be prudent for JCDH to begin monitoring for NO_2 at the Tarrant Elementary School monitor.

B. Gasp recommends the addition of a CO monitor at the Shuttlesworth monitor.

The Plan states in its summary of changes for JCDH for 2015 that JCDH discontinued Monitoring for CO at the Shuttlesworth monitor[1617]. In 2015, Gasp commented on this aspect of the Plan and encouraged JCDH to not discontinue monitoring for CO at the Shuttlesworth monitor. The Plan for 2015 contained a typographical error stating that the monitor closed in 1999[18] (it actually closed in 2009[19]). Gasp was unable to meaningfully weigh in on this proposed change because JCDH's error in submitting their reasoning for closing the monitor resulted in an incorrect and irrelevant analysis by Gasp[20]. With correct closure dates for the Mineral Wool Facility, Gasp is able to more fully analyze the Plan and encourages JCDH to begin monitoring for CO again at the Shuttlesworth monitor.

In the United States, airports are a significant source of air pollution[23]. "Living within six miles of an airport makes people much more likely to suffer heart problems and asthma, a study has found. The researchers blamed [...] carbon monoxide (CO) which is pumped out in higher quantities when planes are idling or taxi-ing on runways.[24]" This study found that hospital admissions for both asthma and other respiratory problems were seventeen (17) percent higher for people living within six (6) miles of an airport[25]. Another study found that children who live in neighborhoods bordering Logan International Airport are as much as four (4) times more likely to wheeze, experience shortness of breath, and exhibit other signs of undiagnosed asthma compared with children who live farther away[26].

Arkadelphia Road Near Road Site fulfills the first requirement under NAAQS. The North BirminghamNCore monitor satisfies the requirement for a minimum of one monitor in any urban area with a population greater than or equal to 1 million people to address community-wide concerns. [18] *See* U.S. EPA, Integrated Science Assessment for Oxides of Nitrogen – Health Criteria at 1xxxvi (January 2016).

[16] State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review at 3 (proposed May 2, [17]), *available at* http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf

[18] State of Alabama Ambient Air Monitoring 2015 Consolidated Network Review at 17 (proposed June 2, 2015), *available at* http://www.adem.state.al.us/programs/air/airquality/2015AmbientAirPlan.pdf.

[19] Letter from Ronald W. Gore to author (Jul 15, 2015) (on file with author).

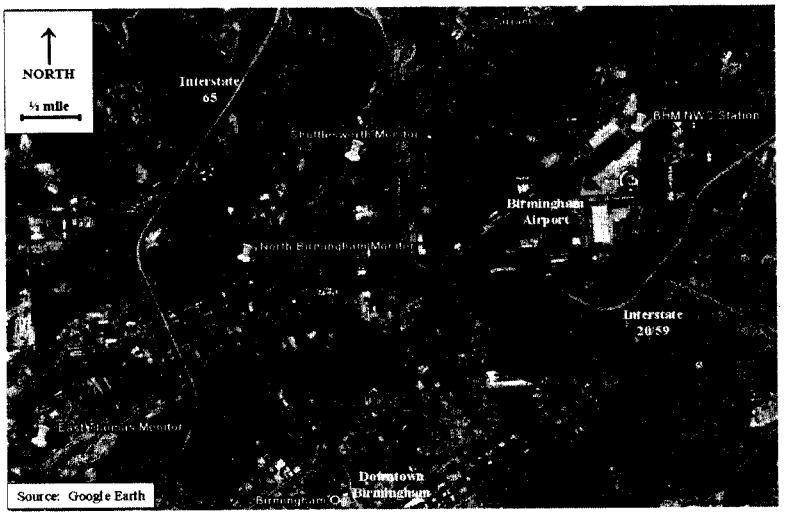
[20] *See* Lewis, H., Gasp Comment on State of Alabama Ambient Air Monitoring Plan for 2015 (2015). [23] *See* Schlencker W. & Walker W.R., Airports, Air Pollution and Contemporaneous Health *available at* http://www.restud.com/wp-content/uploads/2015/09/MS17397manuscript.pdf (last visited June 20, 2016).

[24] Fernandez, C., "Living near an airport IS bad for your health: People who live within six miles have higher levels of asthma and heart problems," Daily Mail, 2015, Oct. 20 *available at* http://www.dailymail.co.uk/news/article-3282060/Living-near-airport-bad-heart-Higher-levels-asthma-

The Shuttlesworth and North Birmingham-NCore monitors are located approximately 2.7 and 3.9 miles respectively from the National Weather Service station at the BirminghamShuttlesworth International Airport[27] as seen in **FIGURE 4**[28] below.

FIGURE 4: MAP OF AMBIENT AIR MONITORS IN RELATED TO BIRMINGHAMSHUTTLESWORTH INTERNATIONAL AIRPORT

Figure 1-2: Aerial view of BATS monitoring area, close-up of 3 sites, Downtown Birmingham and National Weather Service Station at Birmingham Airport



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heart-problems-people-residing-six-miles-blamed-higher-carbon-monoxide-levels.html (last visited June 20, 2016). [25] *See* Id.

[26] *See* Mass. Dep't of Public Health, Logan Airport Health Study (May 2014) *available at* http://www.mass.gov/eohhs/docs/dph/environmental/investigations/logan/logan-airport-health-studyfinal.pdf (last visited June 20, 2016).

[27] Jefferson County Dep't of Health, Birmingham Air Toxics Study (February 2009) *available at* http://www.jcdh.org/misc/ViewBLOB.aspx?BLOBId=182 (last visited June 20, 2016).

[28] Id.

Gasp recognizes that the North Birmingham-NCore monitor continues to monitor for CO. However, considering the aforementioned health impacts on children due to CO emissions from airports and the fact that the Shuttlesworth monitor previously monitored CO and is located in closer proximity to Birmingham-Shuttlesworth International airport, it would be prudent for JCDH to begin monitoring for CO at the Shuttlesworth monitor again. Furthermore, Hudson K-

Eight School is in close proximity to the Shuttlesworth monitor[21] and is in close proximity to Birmingham-Shuttlesworth International Airport[22]. Accordingly, where Hudson K-Eight School is within six (6) miles of the Birmingham-Shuttlesworth International Airport and in close proximity to the Shuttlesworth monitor (which is also located closer to the airport than the North Birmingham-NCore monitor), monitoring for CO at the Shuttlesworth monitor could better address the health impacts associated with exposure to CO due to living near an airport. Therefore, JCDH should begin monitoring for CO again at the Shuttlesworth monitor in order to better protect public health.

C. Gasp recommends that JCDH continue to evaluate enhanced monitoring options for the Birmingham area in anticipation of EPA's ozone designations.

Birmingham, Alabama, has a history of noncompliance with the NAAQS[23] that has not only affected the health of Birmingham's citizens, but also Birmingham's economic development. According to the Alabama Partners for Clean Air, Birmingham's non-attainment designation over the past two decades cost the area "15 major manufacturing facilities, 11,000 jobs and nearly $5 billion worth of investment" in the 1990s alone.[24] The Birmingham metro area reached attainment in 2013 under the 75 parts per billion (ppb) standard. In 2014, ozone concentration data for the Birmingham metro area showed that the region would be in attainment for even a 70 ppb standard. Although Birmingham's rankings for ozone improved in 2015, fourth max values for eight-hour concentrations of ozone increased from 2014 to 2015 for almost all of the ozone monitoring sites in the Birmingham-Hoover MSA[25]. Notably, fourth max values for the North Birmingham-NCore and Tarrant Elementary School monitors were close to .70 for 2015[26].

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[21] Hudson K-Eight School is approximately .81 miles from the Shuttlesworth monitor. Although Hudson K-Eight is approximately .59 miles from the North Birmingham-NCore monitor, the Shuttlesworth monitor is closer to Birmingham-Shuttlesworth International airport and thus would be a better indicator of the CO emissions from the airport.

[22] Hudson K-Eight School is approximately 5.93 miles from the Birmingham-Shuttlesworth International Airport.

[23] In 2013, Birmingham was classed by the EPA as being "in attainment" of the six primary air quality standards measured by federal officials. Raines, Ben. "Birmingham meets federal air quality standards for the first time in 30 years (updated)." AL.com. 2013, January 9 *available at* http://blog.al.com/live/2013/01/birmingham_meets_federal_air_q.html (last visited June 16, 2016).

[24] Alabama Partners for Clean Air. "What is our air quality status?" *available at* http://alabamacleanair.org/air-quality/about-air-quality/ (last visited June 16, 2016).

[25] Specifically, fourth max values for 8 hour concentrations of ozone increased between 2014 and 2015 for the North Birmingham-NCore (.065 to .071), Fairfield (.065 to .068), McAdory (.065 to .066), Hoover (.062 to .068), Corner (.061 to .066), Tarrant (.063 to .073) and Shelby (.063 to .065) monitors. U.S. EPA AirData, http://www.epa.gov/airdata (last visited June 14, 2016).

[26] U.S. EPA AirData, http://www.epa.gov/airdata (last visited June 14, 2016).

Ozone exposure leads to premature death, coughing, sore throats, damage to the lungs, exacerbation of respiratory conditions such as asthma, emphysema and chronic bronchitis. This dangerous ozone is known as ground-level ozone, which forms when nitrogen oxides react with volatile organic compounds. Coal-fired power plants, large industrial facilities, vehicles and gasoline vapors all contribute to ground-level ozone[27]. Transient weather events and weather conditions play a crucial role in ground-level ozone concentrations. Summers with hotter temperatures and dryer conditions yield higher ozone days than wetter and cooler summers[36]. Alabama experienced below average temperatures and above average precipitation in May through June for 2014[37]. For 2015, Alabama experienced near average precipitation and much above average temperature for the May-June period[28]. As such, absent other, concrete evidence to the contrary, it is reasonable for Gasp to deduce that the lower ozone fourth max values for eight-hour ozone concentrations recorded in 2014 as compared with 2015 for the monitoring sites in the Birmingham-Hoover MSA were most probably attributable to temporary weather conditions and not permanent reductions in pollutants that form ground-level ozone.

On October 1, 2015, EPA published a final rule setting a standard of .070 ppm for ground-level ozone. Gasp is aware that Alabama must recommend designation for all areas of the state to EPA by October 1, 2016. Because the new ozone standard is final, Gasp anticipates that JCDH is creating long term plans in preparation for the stronger NAAQS standard for ozone. Jefferson County already experienced a significant number of ozone days (both "moderate" and

"unhealthy for sensitive populations") so far in 2016[29]. EPA will likely designate areas in late 2017, likely based on data from 2014 to 2016. As such, Gasp noted the monitor values for 2014 and 2015 (as data for 2016 will not be final until May 1, 2017) and highlighted fourth max values for the eight-hour concentration that exceed the values recorded for the same monitor in the previous year in **TABLE 1** below:

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[27] *See generally* Fann, N., T. Brennan, P. Dolwick, J.L. Gamble, V. Ilacqua, L. Kolb, C.G. Nolte, T.L. Spero, and L. Ziska, 2016: Ch. 3: Air Quality Impacts. The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. U.S. Global Change Research Program, Washington, DC, 69–98. http://dx.doi.org/10.7930/J0GQ6VP6 (last visited June 15, 2016). [36] U.S. EPA, Trends in Ozone Adjusted for Weather Conditions, https://www3.epa.gov/airtrends/weather.html (last visited June 15, 2016). [37] *See* May-June 2014 Statewide Ranks, National Climate Data Center *available at* https://www.ncdc.noaa.gov/monitoringcontent/sotc/national/statewidepcpnrank/statewidepcpnrank201403-201405.gif (last visited June 15, 2016).

[28] *See* May-June 2015 Statewide Ranks, National Climate Data Center, https://www.ncdc.noaa.gov/monitoring-content/sotc/national/statewidetavgrank/statewidetavgrank201503-201505.gif (last visited June 15, 2016).

[29] In May, Birmingham, AL had sixteen (16) moderate days and two (2) days unhealthy for sensitive groups. JCDH, "Monthly Air Quality Report May 2016, Birmingham, AL" (2016). As of the date of this comment, in June, Birmingham had three (3) moderate days, one (1) day unhealthy for sensitive groups and one (1) unhealthy day. U.S. EPA, AirNow, https://airnow.gov/index.cfm?action=airnow.mapsarchivecalendar (last visited June 14, 2016).

TABLE 1: MONITOR VALUES FOR OZONE IN BIRMINGHAM-HOOVER MSA, 2014-2015[30]

		Monitor	Fourth Max 8 hour
Year	2014	North Birmingam-NCore	.065
		Fairfield	.065
		McAdory	.065
		Leeds	.063
		Hoover	.062
		Corner	.061
		Tarrant	.063
		Helena	.063
	2015	North Birmingam-NCore	.071
		Fairfield	.068
		McAdory	.066
		Leeds	.062
		Hoover	.068
		Corner	.066
		Tarrant	.073
		Helena	.065

Although JCDH cannot plan to comply until EPA's designations are final, and compliance likely will be required by 2025 for attainment areas and 2020-2037[31] for nonattainment areas, the above table is relevant to the long term planning for impeding regulations that JCDH should be performing at present[32]. Notably in **TABLE 1** above, the North Birmingham-NCore and Tarrant monitors would be in violation of the new 70 ppb standard. The design value[43] of these monitors, although representing a difference between two years, especially when considering that weather conditions and events play a crucial role in groundlevel ozone concentrations, could tend to show that JCDH might consider that a nonattainment designation could be a possibility. Accordingly, Gasp recommends that JCDH continue to

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[30] U.S. EPA, AirData, http://www.epa.gov/airdata (last visited June 14, 2016).

[31] *See generally* Five Year Ambient Air Monitoring Network Assessment for the State of Alabama at 27 (proposed July 1, 2015) *available at* https://www3.epa.gov/ttn/amtic/files/networkplans/ALassess2015.pdf.

[32] Such proactive, long term planning is intimated where JCDH asserts that "[i]f the lower NAAQS proposed for ozone results in the Birmingham area being designated as non-attainment the NCore site would need to be upgraded to perform enhanced monitoring for some pre-cursor compounds." Id. at 26. [43] Monitor readings are reported as "design values" for purposes of determining compliance with NAAQS, which for ozone is the fourth highest eight-hour value for three consecutive years.

consider the possibility of the Birmingham area no longer being designated as in attainment and planning for additional monitoring.

D. Additional Inquiries for ADEM and JCDH regarding the Plan and parts thereof

1. ADEM: What was Lhoist North America of Alabama's rationale for choosing the monitoring approach over modeling?

Gasp understands that ADEM will more thoroughly report to EPA whether each source on the DRR final list will implement ambient monitoring or air quality modeling in July of this year. The plan states that proposed changes for ADEM for 2016 include "[p]lanned SO_2 DRR monitoring at [Lhoist] North America of Alabama, LLC – Montevallo Plant, located in Calera, Birmingham-Hoover MSA.[3334]" As ADEM stated in the Plan, generally, modeling is a more effective means of detecting sulfur dioxide exceedances than monitoring[35]. APPENDIX D was quite helpful in understanding the monitoring site and selection process for the SO_2 monitor at Lhoist North America of Alabama. However, Gasp is interested in the rationale for choosing the monitoring approach over the modeling approach. Additionally, Gasp would like to ascertain that ADEM's July 1, 2016 submission to EPA will identify the approaches used for the additional sources on the final DRR list[46]. If further information will be included in this submission, Gasp looks forward to learning more therein.

2. JCDH: Why are results not being reported through AirData for the Shuttlesworth $PM_{2.5}$ monitor and when can Gasp expect such monitor values to be reported through AirData?

As previously mentioned in Section III of this comment, Gasp is interested in clarification from JCDH regarding:

1. When the Shuttlesworth monitor began collecting data; and
2. If the monitor did begin sampling on 2/1/2016, why are the monitor values not being reported through AirData and added to the monthly concentration plot as they are for the other $PM_{2.5}$ monitors throughout the Birmingham-Hoover MSA?

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[33] State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review at 3 (proposed May 2, [34]), *available at* http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf

[35] Five Year Ambient Air Monitoring Network Assessment for the State of Alabama at 73 (proposed July 1, 2015) *available at* https://www3.epa.gov/ttn/amtic/files/networkplans/ALassess2015.pdf. EPA also asserts that "for a short-term 1-hour standard it is more technically appropriate, efficient, and effective to use modeling as the principle [sic] means of assessing compliance for medium to larger sources." Primary National Ambient Air Quality Standards for Sulfur Dioxide, 75 Fed. Reg. 35, 520 (June 22, 2010) [46] This includes the 8 other sources listed on the January 14, 2016 list submitted by ADEM to EPA and the 5 sources that EPA added to the list on March 2, 2016 (excepting, of course, the now closed sources).

3. **JCDH: why are incomplete datasets listed for certain $PM_{2.5}$ monitoring sites?**

Gasp is interested in further information explaining why the following monitoring sites are listed in **Table 9**[3637] as containing incomplete data sets:

1. McAdory School, AQS Site ID 01-073-0023;
2. Shuttlesworth, AQS Site ID 01-073-6004; and
3. Arkadelphia (Near Road), AQS Site ID 01-073-2059.

4. **JCDH: how many sites monitor CO?**

In the Plan for 2015, JCDH planned to discontinue monitoring for CO at the

Shuttlesworth monitor. Gasp objected to the discontinuation of monitoring CO at the

Shuttlesworth monitor in our comments on the Plan for 2015. Pursuant to monitor value reports for 2016 for CO monitors in the Birmingham-Hoover MSA and the chart provided by JCDH in the Plan,[38] there appear to be only three (3) sites monitoring for CO: the North Birmingham-

NCore, Fairfield and Arkadelphia monitors. However, the Plan asserts "[c]urrently CO is monitored at the following 4 sites.[49]" Gasp would like to verify if this is merely a typographical error or if CO monitoring was not discontinued for the Shuttlesworth monitor.

5. **JCDH: what is the reasoning for planned SO_2 DRR monitoring at Shuttlesworth and when will monitoring begin?**

As previously addressed in Section II of this comment, Gasp is interested to learn

1. The rationale for planning SO_2 DRR monitoring at the Shuttlesworth Site; and
2. When will the one year period for DRR monitoring at the Shuttlesworth site begin and when will monitoring end?

V. Conclusion

Gasp maintains that a comparison to the past is the incorrect standard. Although air quality has improved in the Greater Birmingham Area, we still have air quality issues that adversely affect the health of Birmingham citizens. Gasp looks forward to JCDH and ADEM addressing our concerns, recommendations and inquires in this comment. A comprehensive Ambient Air Monitoring Plan will improve air quality and thus the health of all Birmingham and Alabama citizens.

We appreciate the opportunity to comment.

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[36] State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review at 23 (proposed May 2,
[37]), *available at* http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf

[38] *See* State of Alabama Ambient Air Monitoring 2016 Consolidated Network Review at 12 (proposed May 2, 2016), *available at* http://www.adem.state.al.us/programs/air/airquality/2016AmbientAirPlan.pdf

[49] Id. at 12.

gasp

CLEAN AIR. HEALTHY COMMUNITIES.

Respectfully submitted,

Haley C. Lewis

Haley Colson Lewis

Staff Attorney

Michael Hansen

Interim Executive Director

OFFICE OF THE CITY COUNCIL

May 24, 2016

Mr. Lance R. LeFleur
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, AL 36110-2400

Dear Mr. LeFleur:

The Mobile City Council has recently received several complaints from citizens, especially those who reside in downtown, regarding what they suspect to be fugitive coal dust. We are aware that the Alabama Department of Environmental Management sets and enforces air quality regulations for the State. Given that, we urge you to look into these concerns and, also, consider whether it is necessary to revisit air quality monitors in the downtown area.

Thank you for your consideration of this request.

Sincerely,

Gina Gregory
Council President
District 7

Levon C. Manzie
Councilmember
District 2

Cc: Mr. Ron Gore, Chief Air Division, ADEM

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